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CONSULTING UROLOGIST TO KING'S COLLEGE HOSPITAL; SURGEON TO ST. PETER'S HOSPITAL.

LECTURE III.*—THE OPERATION OF SUPRAPUBIC PROSTATECTOMY.

(Delivered on March 5th.)

THE operations for the removal of the enlarged prostate are divided into those performed by the perineal route and those, following McGill, by the suprapubic route. At the present time, largely as the result of Freyer's advocacy, the suprapubic route is almost universally practised. The popularity of the suprapubic route depends upon the ease of approach and the readiness with which the enlarged prostate can be shelled out by the finger. All enlarged prostates can be removed by the suprapubic route, and it is generally believed that the late results of the operation are better than those of the perineal operation. Space does not permit of a full discussion of the merits of the two operations. Only suprapubic prostatectomy will be described. Two types of procedure are at present in use, a closed operation which has been called Freyer's method [1] and an open operation that has been practised by Judd [2] and myself.[3]

Freyer's Method of Suprapubic Prostatectomy.—The bladder is approached and opened by a suprapubic incision two and a half inches in length. The forefinger of one hand is introduced into the rectum and pushes up the prostate. The forefinger of the other hand is introduced into the bladder, ruptures the mucous membrane covering the intravesical portion, and—keeping in close contact with the capsule—enucleates first one and then the other lateral lobe. The urethra is torn across and the prostate removed. The surfaces at the neck of the bladder are pressed together, between the finger in the rectum and that in the bladder in order to reduce bleeding. The bladder is irrigated with hot boric lotion (110° F.) through the catheter. A stout drainage-tube with two lateral eyes at the vesical end is placed in the bladder. The edges of the parietal wound are brought together and the tube kept in place by silkworm-gut sutures. The catheter is removed, and a voluminous dressing of gauze and wool applied. The bladder is irrigated twice daily with antiseptic lotion. The tube is replaced by a smaller one on the fourth day, and this is retained for a few days longer. When the wound has contracted to a small size a catheter is passed along the urethra and the bladder washed out through this.

OPEN PROSTATECTOMY.

Judd's Method.—The patient is placed in the Trendelenburg position, the bladder opened by a suprapubic incision, and self-acting retractors introduced. The prostate is then dissected out by forceps and scissors. A catgut stitch is placed on any bleeding vessel, and if necessary the cavity is packed. Drainage is either by catheter (and the bladder closed), or by suprapubic tube.

Thomson-Walker's Open Method.—The aim of this method is to avoid sepsis, to control bleeding, and to prevent post-operative obstruction. A median suprapubic incision, five inches long, is made, and the bladder is opened. The forefinger of the right hand is introduced into the bladder, the whole hand sinking between the recti muscles so that the hand moves freely. Enucleation commences by rupturing the mucous membrane at the posterior lip of the internal meatus, or on the far side of a projecting lobe. The finger separates the upper part of the lobes and easily finds the line of cleavage. After enucleation of each lobe, assisted by the longer second finger, the anterior commissure is separated from above downwards, the urethra severed on the catheter, and the prostate removed. No finger has been placed in the rectum. A catgut sling is placed in each lip of the bladder wound and the patient is raised into the Trendelenburg position. My self-retaining retractors are introduced, the catgut sling being twisted round the wings of the flynut on each arm. The blades are separated and the wound in the bladder extended so as to allow of free separation. The bladder base is freely exposed, clots are removed from it and the prostatic cavity, and a careful inspection is made.

There is usually some hæmorrhage and sometimes spouting vessels are seen. Arterial bleeding comes almost invariably from an artery lying below the torn mucous membrane at the outlet of the bladder about the mid-coronal line. Venous bleeding comes from the lateral or anterior walls of the prostatic cavity. Long artery forceps are placed on the bleeding points. With a short, strong, fully curved needle on a special holder, a catgut ligature is passed round the bleeding point and tied. There is usually no difficulty in this, but sometimes in the deeper part of the prostatic cavity it may not be easy. A continuous hæmostatic suture is introduced in most cases. This serves the double purpose of controlling bleeding and of forming a smooth edge which heals evenly at the vesico-prostatic outlet. The suture commences just in front of the mid-coronal line on the far side, and passes round the posterior two-thirds of the circumference of the opening. The stitch includes the mucous membrane, the edge of the bladder sphincter, and sometimes, at the lateral aspect of the opening, the edge of a thin layer of the false capsule of the prostate. If the bladder is contracted and deep, and there is urgent necessity for saving time, the stitch may be omitted, but it is very useful and greatly reduces the danger of hæmorrhage.

If venous bleeding persists, in spite of temporary plugging with a swab, and there is no single point readily accessible, the prostatic cavity should be packed. For this, the catheter is drawn well into the bladder, and a strip of iodoform gauze is packed round it.

Having controlled the bleeding, and before introducing the hæmostatic suture or packing, a search is made for tags, flaps, or nodules of prostatic tissue. A large variety of these may be discovered and dissected away. Loose flaps of mucous membrane at the sides of the vesico-prostatic opening are dissected away, and nodules of prostatic tissue may also be removed. A prominent semilunar ledge forms the posterior lip of the opening, which it tends to narrow. It is picked up in the middle line and a wedge cut out of it. This enlarges the vesico-prostatic opening, and prevents post-operative contraction.

Having completed the arrest of hæmorrhage, the clearing of the prostatic cavity and the opening-up of the vesico-prostatic opening, repair of the bladder and abdominal wall is undertaken. A large rubber tube is placed in the bladder and the blades of the retractor changed. The blades are inserted in the pubic end of the wound and separated, and the anterior surface of the bladder wall and the space of Retzius are fully exposed. The bladder is pulled up by the catgut slings and the bladder wound closed up to the tube by a continuous catgut suture. If the prostatic cavity has been packed with gauze, a corrugated rubber strip is placed between this and the bladder wall in front of the tube. A small tube is placed in the prevesical space. Two catgut mattress sutures are placed through the recti muscles and sheaths about an inch from the edge of the wound and the same distance apart. The rectus

* Lectures I. and II. appeared in our issues of May 31st and June 7th, respectively.

sheath is united with a continuous suture of fine catgut and the mattress sutures are tied The skin wound is closed to the tubes with interrupted silk-worm-gut sutures. A many-eyed catheter is tied in the urethra with the tip in the bladder. This is closed with a spigot, and the end of the catheter and the penis are enveloped in an antiseptic dressing.

Routine Post-operative Treatment.—The treatment of cases of prostatectomy from the time of the operation to the closure of the bladder is of vital importance. Failure in the conduct of cases during this stage accounts for a large percentage of the mortality and also for imperfect late results. The following is the routine that is carried out in cases under my care.

Immediately after the operation the foot of the bed is raised 18 inches, and the patient is carefully watched for shock. If he is restless, a quarter of a grain of morphia is given hypodermically and this may be repeated at night if necessary. At the operation a dressing of gauze and wool is applied, and this is usually allowed to remain overnight, or is reapplied. Hæmorrhage is the danger at this stage. An increasing pulse-rate, uncontrollable bladder spasm from clot, restlessness, and blanching are all important signs, and should lead to careful inspection. If bleeding is so severe as to produce large clots, or the general effect of hæmorrhage is apparent and the blood is bright, the prostatic cavity will have to be packed. This is best carried out under a short anæsthesia; gas and oxygen is not suitable as it increases the bleeding. The tubes are taken out, clots are rapidly removed from the bladder with sponge forceps, and a full stream of weak nitrate of silver solution (1 in 20,000) is passed through the catheter. The end of the catheter is now drawn well into the bladder. The prostatic cavity is packed with iodoform gauze, the finger of the right hand being in the bladder and packing the strips of gauze snugly round the catheter. The large bladder tube and the prevesical tube are replaced. If the patient has not already had morphia he is given a hypodermic of a quarter of a grain, and the foot of the bed is well raised.

When no such accident has occurred the usual routine is carried out. The gauze and wool dressing is replaced on the morning after the operation by a Hamilton Irving suprapubic box, and the bed is returned to the horizontal. Either intermittent daily irrigation or continuous irrigation is arranged. The majority of my cases are placed on continuous irrigation, which is maintained for four or five days or even longer. An irrigation rubber bag, or better a thermos, is hung 3 feet above the level of the patient. Interrupting the rubber tube leading from this is a glass dropper. The tube passes over a rubber hot bottle, and is connected with the catheter in the urethra. The tubes of the Hamilton Irving suprapubic apparatus are carried under the thighs to a pail under the bed. The fluid (silver nitrate solution 1 in 20,000) runs at a rapid drip. In the cavity of the suprapubic box is placed a gauze bag of coarse crystals of boric acid, which is replaced every 12 or 24 hours. On the third day after the operation a dose of castor oil is given. Enemata are forbidden, as they are liable to cause hæmorrhage. If the prostatic cavity has been packed the packing should be very carefully removed after 24 or 48 hours. This is assisted by a stream of fluid through the catheter, and constant irrigation is installed at once after the removal. The tubes are removed on the fourth or fifth day, but not before. A small tube replaces the large bladder tube for two days, and is then removed. Continuous irrigation may be maintained for another day or two, or omitted.

Each day the box is removed, cleaned, boiled, and replaced. A suitable ointment containing an antiseptic is smeared on the skin so that the box does not irritate it. Care and frequent inspection are required on the part of the nurse to adjust the box. At the daily dressing a full flow of fluid is passed through the catheter and tube, and all clots are removed. Care must be taken not to raise the pressure in the bladder by too great a flush, otherwise hæmorrhage may be started. If during the time the tubes are in the wound the urine becomes brightly blood-stained or a dark, venous oozing persists, constant irrigation with weak silver solution is installed at once, an injection of morphia is given, and the patient kept quiet. If the oozing persists, an injection of hæmoplastin should be given each night and morning for two days and calcium lactate by mouth in doses of ten grains every four hours for 48 hours. If at the end of this time the bleeding has not ceased or is not diminishing, the prostatic cavity should be packed. Hæmorrhage sometimes occurs about the tenth or twelfth day, when the bladder is beginning to be stretched by contraction on closure of the wound or where it has been over-distended by irrigation. If the bleeding appears to be serious, the suprapubic wound should at once be opened up, and a tube introduced and a catheter placed in the urethra and continuous irrigation installed. If the hæmorrhage persists in spite of this and other measures already enumerated, the prostatic cavity should be packed round an indwelling catheter.

In the usual routine the catheter is removed on the seventh day. During the time the catheter is in the urethra the most stringent precautions must be taken to prevent infection spreading up alongside it or along the column of urine in its lumen. A dressing of glycerin on iodoform gauze is placed round the glans penis, and when the catheter is not in use for irrigation it is closed with a sterile plug and the end covered with an antiseptic dressing. Washing the bladder by Janet's method of hydrostatic irrigation through the urethra and the forcible distension of the bladder to the point of micturition by the nozzle of an irrigating apparatus in an almost-closed suprapubic fistula are methods that are better avoided, as they promote bleeding. Hæmorrhage at the time of the operation and during the convalescence from prostatectomy requires prompt and skilful treatment. The patient operated on for removal of the prostate should leave the operating theatre as dry as he would in any other operation. Continued leakage of dark venous blood should be looked upon as a matter of serious import demanding energetic measures for its control. The appearance of bright blood in the urine, especially when accompanied by clotting, should be regarded as a matter of grave danger. The hæmostatic bag of Hagner or Pilcher is used by some surgeons. It is a rubber bag attached to a catheter and distended with air to press on the walls of the prostatic cavity. The bag is held in position by traction on the catheter. I do not use this method as I have found the means of controlling hæmorrhage already described amply sufficient if applied in proper time.

TWO-STAGE PROSTATECTOMY.

Prostatectomy as a secondary operation is a different operation from primary prostatectomy. The bladder is open and infected and it is adherent to the abdominal wall and the posterior surface of the pubic symphysis. The cavity is reduced to a small space, and the walls are thick and rigid. The abdominal wall in the suprapubic region is infiltrated with inflammatory material and is rigid. Under such conditions open prostatectomy in the manner I have described is not a satisfactory operation. In order to perform the open operation the matted inflammatory tissue and the scar tissue must be dissected away, the bladder freed from the abdominal wall and pubic bones, and the scar tissue in the bladder wall surrounding the fistula excised. This mobilisation of the bladder must take place before the enucleation begins. The contracted bladder renders exposure of the prostatic cavity far from perfect. This is a formidable addition to the ordinary open operation, and is, I believe, too severe for the majority of cases submitted to secondary prostatectomy. There are some cases where months have elapsed since the preliminary cystotomy where the scar tissue is small in amount and the condition of the patient good. In these cases an open operation

may be performed. For the majority of cases of secondary prostatectomy the technique of Freyer is more suitable. With this also the operation is more severe than a primary prostatectomy, and the probability of obtaining a clean prostatic cavity and a rapidly closing firm wound is less.

Prostatectomy in the Fibrous Prostate.

In most cases of fibrous prostate enucleation by the closed method is a difficult and unsatisfactory operation, and may be impossible to complete. The ultimate results in the majority are highly unsatisfactory. The ragged walls left after tearing out the prostate promote sepsis, and post-operative contraction of the vesico-prostatic outlet is a likely sequel. It has been suggested that these cases should be operated by the perineal route. It must be remembered that in many cases the adherent nature of the prostate is not discovered until the operation has commenced, and occasionally only when the prostate is partly enucleated. To abandon the operation and resort to a perineal dissection is a highly unsatisfactory procedure. I have found no difficulty in dissecting these prostates by the open suprapubic method. If difficulty is encountered in enucleating the prostate the patient is at once placed in the Trendelenburg position and the operation performed by dissection.

Where the adherent nature of the prostate is discovered before enucleation has been commenced the Trendelenburg position is assumed at once, and the bladder base exposed. The mucous membrane round the internal meatus is incised with curved scissors and the incision deepened. The upper part of the prostate, as it begins to appear, is grasped with forceps and gently raised while the clipping with scissors proceeds, the blades being kept rigidly to the surface of the gland. The lobes are dissected equally and some blunt dissection with the closed scissors or the forefinger may help. The anterior commissure is separated from above downwards, and the urethra cut across. A clean, roomy cavity with smooth walls can thus be obtained. There is more tendency to bleeding after the dissection than after enucleation, and I usually pack the prostatic cavity as well as introducing a hæmostatic suture.

Surgical Accidents and Complications of Prostatectomy.

The causes of death in 269 cases of suprapubic prostatectomy for simple enlargement of the prostate at St. Peter's Hospital are stated in the following table, and give a general idea of the dangers that attend the operation.

Table showing Causes of Death after Suprapubic Prostatectomy in 269 Fatal Cases at St. Peter's Hospital from 1901 to 1929.

		Total number and Percentage.
Surgical accidents:		
Shock	25	64 (23·4)
Cardiac failure	32	
Hæmorrhage	7	
Renal failure:		
Uræmia	67	67 (24·0)
Septic complications:		
Pyelonephritis	53	63 (23·4)
Pelvic cellulitis	3	
Septicæmia	7	
Diseases of the lungs:		
Pneumonia	23	28 (10·4)
Bronchitis	5	
Diseases of the circulation:		
Cerebral hæmorrhage	4	26 (9·6)
Coronary thrombosis	1	
Venous thrombosis	1	
Pulmonary embolism	20	
Diseases of the bowel:		
Acute dilatation of the stomach	1	3 (1·1)
Ileus of intestine	2	
Asthenia and general debility	10	10 (3·7)
Accidental complications:		
Acute mania	2	8 (2·9)
Influenza (epidemic)	4	
Pancreatitis	2	
		269

It will be seen that over 70 per cent of fatal results are due to shock, renal failure, and sepsis. Hæmorrhage accounts for only a small number (2·6 per cent.) of deaths, but it is probably a contributory factor in other fatal cases, such as some of those from asthenia and general debility.

Shock and cardiac failure are the result of too severe an operation on an old or enfeebled patient. The most serious shock follows attempts to enucleate an adherent fibrous prostate, secondary prostatectomy with much rigidity of the abdominal wall, and the open operation where the surgeon is unpractised in bladder surgery and unsystematic in surgical technique. At St. Peter's Hospital the open method is the operation generally practised, and the mortality compares very favourably with other hospital figures. In each case the type of operation which is most suitable should be chosen, having regard to the condition of the patient and the ability and experience of the surgeon.

The avoidable causes of serious hæmorrhage after prostatectomy are numerous. They include the following:—

1. Insufficient precautions at the time of the operation.
2. Sepsis. The onset of an attack of cystitis from post-operative infection may be heralded by severe hæmorrhage. Late hæmorrhage (tenth to twelfth day) is seldom a real secondary hæmorrhage in the surgical sense.
3. Injudicious and unskilful passage of instruments along the urethra during the first week or ten days after the operation.
4. Over-distension of the urethra or bladder by attempts to wash the bladder by Janet's hydrostatic method or by forcing fluid into the bladder through a narrow suprapubic fistula.
5. Distension of the rectum by large enemata during the first week after operation.
6. Straining and undue exertion on the part of the patient.
7. Delay in treating a moderate hæmorrhage when it is commencing or when there is continuous oozing.

After the operation all patients should be encouraged to drink large quantities of fluid and especially the diuretic waters, such as Contrexéville and Vittel. If symptoms of uræmia appear (drowsiness, want of appetite, thirst, dry tongue) the diuretics should be pressed, and in addition fluid may be introduced by means of proctolysis or subcutaneous or intravenous infusion of saline solution with glucose. The prevention of septic complications begins at the operation and continues until the bladder is closed. In the open operation the rectal finger is banned, and all shreds and loose material likely to slough and become infected are carefully removed.

After the operation the following measures are adopted to prevent sepsis:—

1. The Hamilton Irving suprapubic box with a bag of boric acid crystals on the wound.
2. Continuous irrigation of the prostatic cavity and bladder with weak antiseptic solution through a catheter retained in the urethra.
3. Antiseptic dressing of the penis and catheter.
4. The routine use of urinary antiseptics such as cystazol, caprokol, and acriflavin.

Epididymitis is one of the most frequent complications of urinary infection, and many surgeons perform vasectomy at the time of the prostatectomy. I have not found this necessary, for epididymitis occurs only in a small number of my cases (6·4 per cent.), and is usually very mild.

The Merits of the Different Operations.

The closed, blind or Freyer method has the advantage of rapidity, which in some cases that require operation is a matter of importance. The question of rapidity must, of course, depend on the habits and skill of the surgeon, but other things being equal, it is the most rapid of the suprapubic operations. This method is, moreover, easy to perform and requires no special skill in bladder surgery. Once the surgeon has learned to find the line of cleavage he will succeed, in some measure at least, in removing the obstruction.

Its disadvantages are that sepsis is more likely to be a complication of convalescence than in some other methods, that hæmorrhage is blindly and often imperfectly controlled, and that post-operative

obstruction may be expected in a certain proportion of cases.

The open operation has the advantages that many of the causes of sepsis are removed, that hæmorrhage is more efficiently controlled, and that post-operative obstruction is guarded against.

The disadvantages of the open method are that it is more difficult and needs a knowledge of bladder surgery, notably the proper exposure of the bladder base and intravesical manipulation.

Practice and team work is necessary if the time taken is not to be unduly prolonged. My usual time for the operation from the incision to the last stitch is 18 minutes, and, if the hæmostatic stitch is omitted, 13 minutes. The longer time taken by a surgeon unaccustomed to bladder work is a serious disadvantage. Enucleation with the finger in the horizontal position before exposure of the bladder base has the advantages that the method is more rapid than dissection in the Trendelenburg position, and in my experience there is less hæmorrhage when the prostate is enucleated than when it is dissected. Enucleation has the further advantage that the time during which the patient is in the Trendelenburg position is shorter.

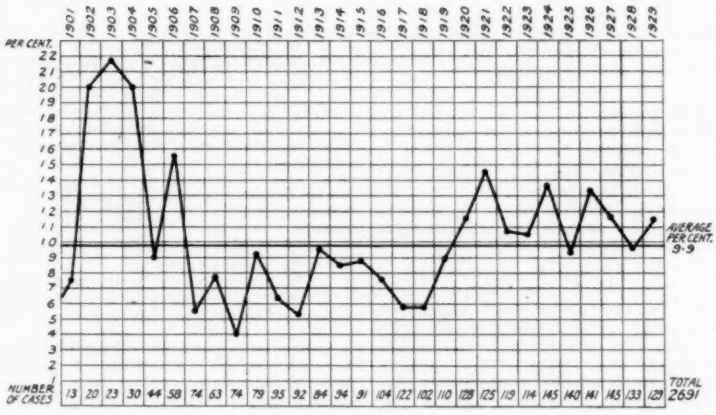


Chart of mortality of suprapubic prostatectomy at St. Peter's Hospital during 29 years.

RESULTS.

The results of suprapubic prostatectomy for simple enlargement of the prostate will be considered under two headings: mortality of the operation and failures.

Mortality.—In order to obtain a general view of the mortality of suprapubic prostatectomy, I found it necessary to collect statistics from various sources representative of the different conditions under which the operation is performed. In this country there is a sharp distinction between the arrangements that control the after-treatment of charity patients and what are called private patients. I have been fortunate in obtaining statistics from 11 of the great hospitals in different parts of the country for a period of ten years (1918 to 1928), and one for a period of seven years. I wish to express my cordial thanks to the members of the surgical staffs of these hospitals for the readiness with which they acceded to my request for information and the trouble taken to collect the statistics. I have arranged the statistics of the general hospitals in the accompanying Table, the hospital being designated by a letter and the number of beds in each hospital being indicated. The second group of statistics are those of St. Peter's Hospital, London, a hospital of 30 beds devoted entirely to surgical diseases of the urinary organs. The statistics of this hospital include all the operations of suprapubic prostatectomy from the first operation Sir Peter Freyer performed there in 1901 to the end of 1929. The third group of statistics which represent the statistics of private practice are my own cases. In order that the groups may be entirely distinct, I have excluded from my own figures all cases operated on in hospital.

In the general hospitals there were 3451 operations of suprapubic prostatectomy for simple enlargement of the prostate. Of these, 675 died, a mortality of 19·5 per cent. At St. Peter's Hospital there were altogether 2691 cases in a period of 29 years with 268 deaths, a mortality of 9·9 per cent. The fluctuation of the mortality from year to year is set out in the accompanying chart. In three of the years the mortality was below 5 per cent.—namely, 4 per cent. in 1909 and 4·9 per cent. in 1917 and 1918. In my private practice, during the 11 years 1919 to 1929 inclusive, I performed suprapubic prostatectomy on 472 patients with 25 deaths, a mortality of 5·2 per cent. The total number of my private cases was 608, with 37 deaths, a mortality of 6·08 per cent. There were series of cases of a year's duration in which the mortality fell to 1·7 per cent. (1921) and 2·1 per cent. (1923), and there were other series where the mortality rose to 9·7 (1927) and 11·4 (1920) per cent. The fallacy of considering a short period of time and a small number of cases is therefore obvious. It is, I think, the experience of all surgeons that a very considerable difference exists between the mortality of their private practice and that of their hospital work, and there is a further difference in mortality that becomes evident in the statistics that I have collected — namely, between the mortality of prostatectomy in the wards of a general hospital and that of a special hospital.

It is evident, therefore, that there is some factor outside the immediate control of the operating surgeon that produces so constant a difference in the mortality. The patients in private practice are on the whole better cared for and subjected to less physical strain, and are for the most part less exposed to the effects of unsuitable diet than are those of the hospital class. Hospital patients are, as a rule, submitted to operation at a later stage of the disease than private patients, and infection of the urinary tract is more frequently present before operation. Nevertheless, it cannot be denied that a very considerable proportion of cases operated on in private practice are grave surgical risks. A glance at the figures I have given in regard to circulatory risks is convincing of this. Moreover, the cases treated in a special hospital, taking them as a whole, are slightly greater surgical risks than those treated in a general hospital, for the reason that the cases that are considered hopeless elsewhere are usually referred to the special hospital.

So far as selection of cases for operation is concerned, I can vouch for the wide range of risks that are faced in the special hospital. If there is any criticism to make it is rather on the score of occasional recklessness than of over-caution in the sifting of cases for operation. In selecting cases we have been influenced by the fact that a working man who is refused prostatectomy is condemned either to catheter life or to suprapubic drainage, and that either of these alternatives implies certain misery and very grave risk; that, doubtless, is the general feeling among surgeons at the present time. The principal cause of the difference in statistics is, I think, to be found in the different conditions under which post-operative treatment is carried out in a general hospital, a special hospital, and in private practice. In a general hospital these patients are necessarily treated in large, freely ventilated surgical wards, and the post-operative treatment is mainly in the hands of the resident

surgeon, who as a rule is recently qualified and is replaced every six months. The private patients are accommodated in private hospitals or homes in separate rooms, heated to suit their special sensibility, and attended by special nurses accustomed to deal with these difficult cases; the post-operative treatment is carried out by the operating surgeon or his permanent assistant. Between these come the special hospitals, where the grouping of cases leads to special nursing measures and the post-operative treatment is in the hands of a resident surgeon of senior grade who has held several surgical appointments and been trained as a junior in the dangers which follow operation in these cases before he assumes the full responsibility.

The treatment after operation for prostatectomy is complicated, and its success depends on scrupulous attention to detail and on early and rapid action thinking that, if the belief in adequate preoperative examination and treatment were generally held, the time and accommodation would be forthcoming. It may well be that the adoption of a two-stage operation in some surgical centres is an attempt to meet this objection; as such it cannot be too highly commended. My own view is that the preparation in the average case is better carried out by careful catheter drainage and simultaneous general treatment. But if this cannot be efficiently carried out in the wards of a general hospital, the preliminary cystotomy of a two-stage operation is the best substitute, provided that adequate measures for the prevention of infection of the cystotomy wound and bladder be adopted.

Time might well be saved and the mortality lowered by the more detailed methods of prevention of sepsis after operation. It appears to be a fairly

HOSPITAL	BEDS	TOTAL OPERATIONS	TOTAL DEATHS	TOTAL DEATHS PER CENT.	ONE STAGE OPERATIONS	DEATHS ONE STAGE OPERATIONS	DEATHS % ONE STAGE OPERATIONS	TWO STAGE OPERATIONS	DEATHS TWO STAGE OPERATIONS	DEATHS % TWO STAGE OPERATIONS
A	668	425	95	22·3	252	55	18·8	173	40	23·1
B	336	157	32	20·3	102	16	15·6	55	16	29·0
C	250 ONE SERVICE ONLY	76	14	18·4	68	12	17·6	8	2	25·0
D	1006	1342	292	21·7	986	224	22·7	356	68	19·1
E	268	140	32	22·8	95	24	25·2	45	8	17·7
F	600 ONE SERVICE ONLY	58	10	17·2	40	8	20·0	18	2	11·1
G	572	448	57	12·7	154	23	14·9	294	34	11·5
H	275	128	21	16·4	77	12	15·9	51	9	17·6
I	366	157	36	22·9						
K	436	210	31	14·7	115	21	18·8	95	10	10·5
L	442	133	23	17·2	83	14	16·8	50	9	18·0
M	644	177 SEVEN YEARS ONLY	32	18·0	88	15	17·0	89	17	19·1
		3,451	675	19·5	2060	424	20·5	1,234	215	17·4

Table of mortality of suprapubic prostatectomy at 12 general hospitals.

where surgical accidents such as hæmorrhage occur. It cannot be expected that every newly qualified surgical officer will bring with him the knowledge and experience necessary for the successful conduct of these difficult cases. Some brilliant young men do come prepared, and it has been my pleasant experience to pass two years in the special department of King's College Hospital without a single death after prostatectomy. Further, Mr. Harold Edwards [4] has published the statistics of the Urological Department at King's College Hospital during five years (1922–26), which showed a mortality of 8·7 per cent. in 126 cases. But this is exceptional, and it is during the early months of learning that the mortality figures of the operation creep up.

There are two other points on which I write with some diffidence, for they relate to matters of surgical opinion rather than to the discussion of general management. I am not quite certain that sufficient attention is paid to the complete examination and careful preoperative treatment of these cases, and I do not think that the measures taken to combat post-operative sepsis and hæmorrhage are universally adequate. Complete preoperative examination and preparatory treatment require time, and mean that a surgical bed is occupied for a longer period. The shortage of hospital beds and the necessity for the rapid passage of patients to make way for emergency cases curtails very severely the time that can be given to this part of the treatment. But I cannot help widespread belief that an indwelling catheter and continuous irrigation after the operation are difficult measures to apply, and will cause hæmorrhage and epididymitis. This view is not in accord with my experience, and I believe that if this method, together with the other details of post-operative treatment that I have already described, were intelligently carried out, the post-operative period of healing and septic complications would be reduced. There should be no hesitation or delay in carrying out the measures for the control of hæmorrhage that have already been described. Most of the danger of hæmorrhage after operation is due to the treatment being applied too late. Hæmorrhage is too often treated when the patient is moribund instead of at the beginning when he still has reserves of blood and strength.

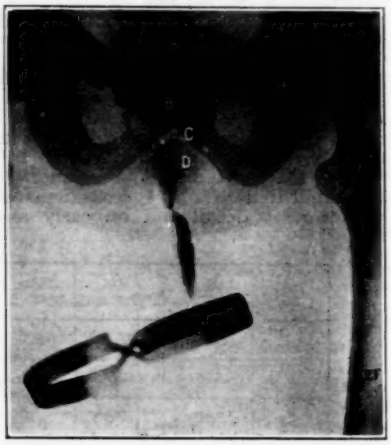
A second question that arises in regard to the mortality is the influence that the type of operation has upon the death-rate. The most important division of operations is that into one-stage and two-stage prostatectomies. In the accompanying table of cases from general hospitals the total single-stage operations, so far as could be ascertained, was 2060; of these, 424 died, a mortality of 20·5 per cent. The total of two-stage operations was 1234, of these 215 died, a mortality of 17·4 per cent. There is a saving here of 3·1 per cent. In St. Peter's Hospital statistics, the number of two-stage operations was 464 with 59 deaths, a mortality of 10·3 per cent., which is higher by 0·5 per cent.

than the single-stage operation. These figures taken at their face value are, however, misleading if a true comparison of the two operations is to be made. Where the single-stage operation is the rule, the two-stage operation is reserved for the most serious cases, and is necessarily accompanied by a higher mortality. Thus in hospitals A, B, and C the larger number of operations were performed by a single-stage operation, and only a small number by the two-stage method, and the latter carried a much higher mortality. In hospitals E, F, G, and K the numbers done by each method were much more equal, and it was evident that not the worst cases alone were selected for the two-stage operations. Here the mortality of the two-stage operation was lower than that of the one-stage. In hospital D the figures of the one-stage operation are not quite certain, as some two-stage operations were probably included, but those given under the two-stage operations represented all the prostatectomies done during two years, so that no selection of cases adverse to the two-stage operation had taken place. Here the mortality of the two-stage operation is 2·6 per cent. below the total percentage and 3·6 per cent. below the probable one-stage operation mortality. It appears from these statistics that in general hospitals where all the cases are operated on in two stages there is a moderate improvement in the death-rate. It is probable that if the two-stage operation were universally adopted in general hospital work, the difference in the figures would be greater. My own preference would be to try a more careful and prolonged preparation with a single-stage operation and more careful instruction in post-operative treatment of these cases. If it were possible to close the bladder at once in all cases, the dangers that attend the post-operative treatment of an open cystotomy wound would be greatly reduced. This is not, however, possible at the present state of our knowledge, and it is not of great benefit to close the bladder in a few selected cases.

FIG. 1.

Lipiodol injection of urethra and bladder in case of moderate enlargement of prostate. A, Intravesical projection of prostate. B, Prostatic urethra. C, Membranous urethra. D, Bulbous urethra.

FIG. 2.



Bladder and urethra after open suprapubic prostatectomy. A, Bladder. B, Prostatic bed with wide opening into bladder. C, Membranous urethra closed by sphincter. D, Bulbous urethra.

FAILURES OF PROSTATECTOMY.

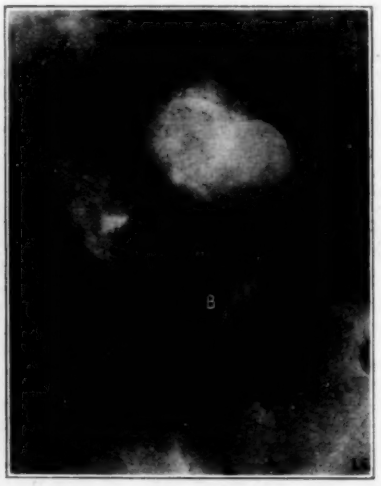
The operation may be said to have failed or to be incompletely successful when free voluntary micturition is not re-established, so that there is difficulty in expelling the urine, in varying degrees up to complete inability; or when the frequent micturition and bladder irritation is not relieved; or again where there are recurrent attacks of cystitis, pyelitis, pyelonephritis or epididymitis, or the development or recurrence of stone; or where the wound does not close and a fistula persists. These failures can be traced in the great majority of cases to two causes, one or both of which may be at work—namely, sepsis and obstruction.

Post-prostatectomy Obstruction.—Obstruction after suprapubic prostatectomy varies from a slight difficulty in micturition to complete obstruction with suprapubic fistula. Other conditions than obstruction may delay the healing of the suprapubic wound after

FIG. 3.

Complete occlusion of prostatic urethra after closed suprapubic prostatectomy. A, Bladder injected through suprapubic fistula. B, Position of prostatic bed and membranous urethra. C, Bulbous urethra.

FIG. 4.



Same case as Fig. 3, after operation for relief of obstruction. Fistula closed, normal urethral micturition re-established. A, Bladder. B, Prostatic bed.

prostatectomy—namely, general debility, glycosuria, prolonged retention of the drainage-tube, and adhesion of the lower lip of a too low-placed cystotomy wound to the pubic symphysis while the upper end of the wound moves freely. The chief causes, however, are sepsis and obstruction. In the open operation with a long abdominal incision the wound heals by first intention down to the tube aperture, the urine is usually passed along the urethra about the eleventh or twelfth day after the operation, and the wound is dry on the sixteenth day. The following are the average dates on which the urine was passed and the wound dry during six years. From these statistics seven cases have been removed. Four were two-stage operations where the first stage had been done for severe sepsis, and it was not possible to resect the indurated area of the abdominal wall so as to ensure rapid healing. In another there was a fæcal fistula alongside the suprapubic wound, and another had a carbuncle that infected the wound. These cases were so unusual as to justify separation from the others in considering the common post-operation course.

Year.	Day average.	Day average.
1924	13·1	16·7
1925	12·1	16·4
1926	10·1 Urine	16·0 Wound
1927	10·0 passed.	16·3 dry.
1928	12·6	15·6
1929	11·8	16·3

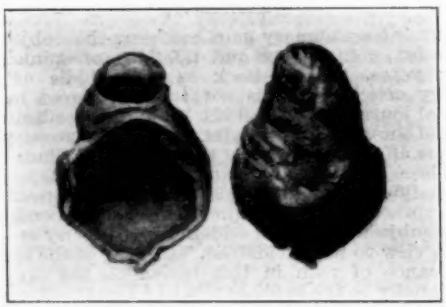
In 75 cases of severe obstruction following suprapubic prostatectomy submitted to me for consultation the following conditions were found.

1. Fibrous contraction at the site of the operation.
2. New growth in the wall of the prostatic bed due to (*a*) recurrence of simple enlargement of the prostate, (*b*) malignant growths.

Fibrous Contraction at the Seat of Enucleation of the Prostate.

There are two danger-points for the development of stricture after suprapubic prostatectomy—namely, at the membranous urethra and at the outlet of the bladder. At each of these points the mucous membrane

FIG. 5.

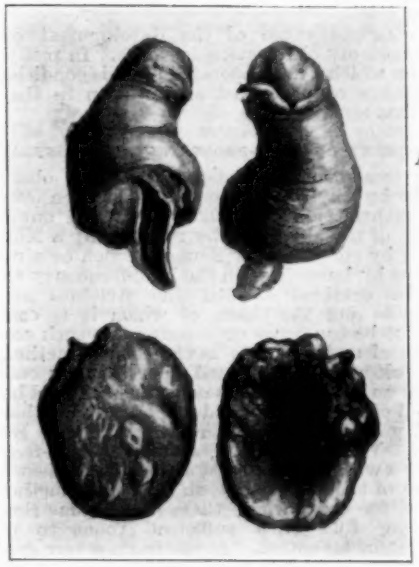


A B

Specimen of second prostatectomy for recurrence of simple enlargement of prostate. A, Anterior view. Ring of prostatic tissue and nodule at internal meatus. Wide prostatic urethra. B, Posterior view.

of the urethra is torn across. It is rare to find contraction at the membranous urethra. This only occurs in 4·3 per cent. of the cases of post-prostatectomy obstruction that I have seen. The point of narrowing in 85·5 per cent. of cases is at the opening from the bladder into the prostatic cavity. In some cases there was also the development of thick masses of fibrous tissue in the wall of the prostatic bed. In addition to fibrous contraction at the vesico-prostatic opening, there was a variety of folds and flaps of mucous membrane and nodules of prostatic tissue or of granulation tissue in the immediate neighbourhood of the outlet. In several there was a hard fibrous ridge passing backwards or laterally from the site of the internal meatus across the base

FIG. 6.



A

B

Malignant growth in pathological capsule of enlarged prostate. A, Anterior and posterior views of easily enucleated enlarged prostate. B, Anterior and posterior views of malignant growth in capsule dissected after enucleation of prostate.

of the bladder. The fibrous contraction formed a hard ring round the internal meatus, which was so narrowed as to admit a fine olivary bougie or a fine probe. In seven cases the internal meatus was completely obliterated and covered with mucous membrane, so that no trace of it could be discovered. In one of these cases a false passage had been tunnelled through the bladder base and opened into the bladder behind the trigone; in another a false urethra tunnelled through the right lateral wall of the bladder.

In all these cases the degree of obstruction was severe. In 43 per cent. there was a suprapubic fistula that had persisted since the operation. In the remaining cases there was great difficulty in micturition and recurrent attacks of retention of urine relieved with great difficulty by the passage of a catheter. In 39 cases where it was possible to ascertain the type of prostate removed at the original operation it was small, fibrous, and difficult to enucleate in 17, adherent and containing calculi in 3, and large and easily enucleated in 19. The number of the two main types of simple enlarged prostate—namely, the fibrous and the adenomatous—was practically equal. In all the cases the blind method of operation was performed, and in three it was done in two stages.

The causes of post-operation obstruction after suprapubic prostatectomy are: (1) imperfect removal of obstruction; (2) sepsis.

It is an essential part of the open method that these causes of future obstruction should be removed and that a free opening from the bladder into the prostatic cavity should be ensured, removing, if necessary, a wedge from the posterior segment of the ring of the vesico-prostatic outlet. At the end of this operation the prostatic cavity is open to the cavity of the bladder, so that there is no hour-glass formation by narrowing at the junction of these cavities (Figs. 1 and 2). The

sphincter of the bladder after suprapubic prostatectomy, as I pointed out many years ago, is the compressor urethræ, and there is no possibility, as there is no necessity, of restoring the internal sphincter. The freer the opening between the two cavities the better. I can see no object in narrowing this part of the bladder outlet, as has lately been described, and I am apprehensive that the late results of this attempt will show an increase in the number of cases of post-operative obstruction.

The second cause of the development of post-prostatectomy obstruction is sepsis. In many of the cases on which I have operated for this condition there is evidence of prolonged suppuration in the heavy scars that remain.

Treatment of Post-prostatectomy Contraction.

The treatment of post-prostatectomy obstruction may be by way of the urethra or by open operation. The urethral treatment may be carried out by the passage of metal sounds, by rupture, by a Kollman's dilator, by cutting with Young's punch or a urethrotome, or by burning with the high-frequency cautery. For the urethral method the stricture must be permeable and the tissue of which it is composed must not be too dense or massive. In such cases the passage of metal sounds is the easiest method, care being taken that the sound does actually enter the bladder and the point does not pass backward between the wall of the prostatic bed and the canopy that roofs it and push up the bladder base. For the Kollman dilator, Young's punch, and the high-frequency cautery a wide opening must already be present for the passage of the instrument, so that these methods are reserved for cases where there is a fibrous ring or a projecting fold with sufficient room to pass a No. 12/14 metal sound. In the more severe grades of obstruction these methods do not come into consideration, for the instruments cannot be introduced into the bladder.

I have now treated 40 cases of severe post-prostatectomy obstruction by open operation, and in all the cases the operation was successful in restoring free micturition without residual urine. I have elsewhere described the operation in detail.[5] The essential points are the removal of all scar tissue from the abdominal wall, free mobilisation of the bladder, and removal of scar tissue at the opening of the fistula, and exposure of the bladder base with free dissection of all scar tissue or other obstruction at the vesico-prostatic outlet and, if necessary, in the prostatic bed (Figs. 3 and 4). The after-treatment is that of a suprapubic prostatectomy.

New Growth in the Prostatic Bed.

(*a*) *Recurrence of simple enlargement of the prostate.*—Incomplete removal of the enlarged prostate, when only the intravesical projection of the prostate is removed or when only one lobe has been enucleated, is occasionally met with and is easily recognised. A more important form of development of prostatic obstruction occurs when the enlarged prostate is reconstructed after what was apparently a complete enucleation.

From a patient aged 77 I removed a large bilobed adenomatous prostate in May, 1916, by the blind method. Ten years later he began to have difficulty, and on examination the prostatic area was occupied by what appeared to be an ordinary enlargement of the prostate gland. In 1926 I removed, partly by enucleation and partly by dissection, an adenomatous nodule with a complete ring of prostatic tissue (Fig. 5). From the posterior aspect the specimen resembled an ordinary enlargement of the prostate with an intravesical lobe. From the anterior aspect the ring was complete only at the upper part; below this was an open trumpet-like tube with a smooth lining on the surface of which small openings of gland ducts could be detected. Microscopical examination showed a fibromuscular stroma with prostatic gland acini of various sizes.

I have examined a number of similar cases in consultation where the prostate appears to have been reconstructed after prostatectomy. The recurrent simple prostate undoubtedly takes origin in layers of the pathological capsule that have remained in the wall of the prostatic bed after an incomplete prostatectomy.

(*b*) *Malignant growth in the wall of the prostatic bed.*—In discussing the development of secondary malignant growth in simple enlargement of the prostate (Lecture II.), I referred to the position in which this might take origin. One of these positions is at the periphery of the enlarged gland.

The following case came under my care:—

A man, aged 64 years, had an enlarged, tough and somewhat fixed prostate which I considered as probably malignant although not hard or nodular. A round adenomatous nodule projected into the bladder and, to my surprise, a well-formed enlarged prostate with two lobes and an intravesical lobe shelled easily in one piece. On examining the prostatic bed I found a leathery capsule left behind. This I dissected out as a cuff and microscopical examination showed that it was composed of fibromuscular tissue with glandular alveoli and was infiltrated throughout with carcinoma (Fig. 6). Section of this prostate showed that the outer part only was infiltrated in places with cancer cells.

I have met with a number of cases where the prostate had been removed and it was stated that the gland had shelled out easily, yet after an interval of one or several years obstruction recurred. On examination there was a malignant infiltration of the wall of the prostatic bed. These cases belong to the group of secondary malignant growth of the prostate originating in the periphery of an adenomatous gland.

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LEFT INFRAMAMMARY PAIN.

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(*With a Note by* Dr. JOHN PARKINSON.)

Introduction.

Left inframammary pain has been the subject of discussion, controversy, and difference of opinion for many years. As far back as the middle of last century articles on this condition appeared in the medical journals, and in 1864 Martyn[1] described it as "one of the most frequent, intractable, and mysterious nervous affections we have to do with." Since then it has been mentioned by many writers, more especially under differential diagnosis from angina pectoris; yet in spite of this spasmodic interest in the condition, it is a subject which has seldom been directly studied with a view to its elucidation. In view of the serious significance of pain in this region to the lay and occasionally to the medical mind,[2 3] I have attempted to describe a clinical picture which will allow of its ready recognition, to arrive at some estimate of its real meaning and importance, and to discuss the prognosis and differential diagnosis.

Methods of Investigation.

The following investigations have been made chiefly on patients attending the National Heart Hospital, with a few seen in private practice. I am indebted to Dr. Parkinson, who proposed this investigation, and provided facilities for its development.

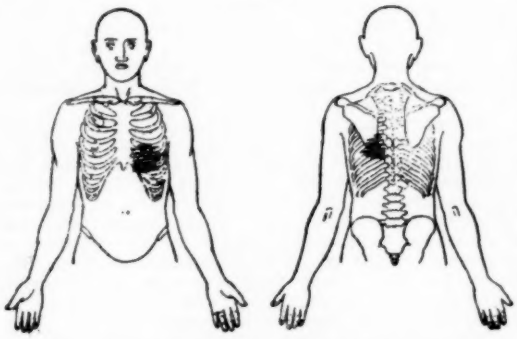
(1) The following up of patients who are known to have had pronounced left inframammary pain as shown by their hospital records. The re-examination of them now, 5, 10, even 20 years later in an endeavour to throw some light on the clinical course, prognosis, and differential diagnosis of the complaint.

(2) The examination of a certain number of patients who from week to week have presented themselves at the out-patient department giving this pain as their chief symptom, in order to obtain an accurate and complete clinical picture.

(3) The investigation by statistical methods of the incidence of the condition in a series of consecutive out-patients.

In deciding which patients to accept for this purpose attention has been directed to severity and persistence of the pain and its duration; in searching the old records of the hospital for suitable cases all of doubtful diagnosis have been excluded. Thirty-two cases have been collected whose records go back over a number of years, the longest 29 years. From the hundreds who have attended primarily with this complaint, 20 other illustrative cases have been selected for particular investigation and observed weekly or monthly. In the statistical investigation consecutive out-patient cases during the year 1927 have been chosen.

FIG. 1.



(Case 14). The chief site of pain is indicated by a cross. The shaded area is hyperæsthetic.

From the reading of the literature on the subject it seemed of primary importance to decide as exactly as possible what was understood by the left inframammary or præcordial region. The accompanying diagram (Fig. 1) shows the areas of hyperæsthesia found in Case 14, and it illustrates the parts under discussion; the areas involved primarily are DV and VI according to Head's segmental areas[4]; there is some extension above and below and to the subscapular region. The common association of left inframammary pain with left subscapular pain was described by Parkinson in 1919.[5]

The method of examination has been as follows:—

(*a*) Routine examination, including estimation of blood pressure and testing of urine.

(*b*) Wassermann reaction; X ray examination; electrocardiogram.

(*c*) Testing for hyperæsthesia by the simple method of lightly dragging the head of a pin over the skin. This was a method used by Sir James Mackenzie and Sir Henry Head.[4] Tenderness was then elicited by palpating with the finger tips over the same regions. The parts examined were the left breast above and below the nipple and the region about the angle of the left scapula; and the results were entered on a chart.

A Typical Case.

To introduce the subject clinically, a typical example may be quoted.

CASE 14.—A woman, aged 54, complained of an almost continuous pain under the left breast, frequently also under the left shoulder blade, along with a dull ache in the left arm. The pain was always worse after the day's work in the evening, or in bed at night. It began about two years ago as a sensation of soreness and weight, occasionally as pricking in the left inframammary region. At first there were intervals of weeks or months of relief; latterly it was almost continuous. Other complaints were exhaustion, dyspnœa on exertion, and difficulty in taking a deep breath at rest, palpitation, loss of appetite, and poor sleep. She volunteered that the skin below the left breast was often sore, and at times she could not bear her clothing against it.

On examination: a nervous, anxious woman. Pulse regular, 72 lying, 80 standing. Blood pressure, 160/90; later, 145/90. Urine normal. Routine examination of cardiovascular system, negative. Radioscopy, nothing abnormal. Electrocardiogram, physiological. Wassermann reaction negative. Hyperæsthesia, a large area in the left inframammary and mammary regions, also about the angle of the left scapula; some tenderness on palpation in both these areas (Fig. 1).

Ætiology.

Sex.—The condition is much more common in women than men; in this series were 43 women and 9 men.

Age-incidence.—Broadly there are two groups, younger patients in the late twenties and the thirties, and older patients in the late forties and fifties—that is, in women the years about the menopause. In children it is rare, and in the elderly uncommon.

Build and temperament.—This does not appear to be so clearly defined as has been suggested by some observers. Patients are either of the thin anxious type or stout and stolid; this latter build is seen more frequently in middle-aged women. The majority, it is true, present what have been described as nervous stigmata.[7]

Rheumatism.—Six only out of the series of 52 gave a history of acute rheumatism, and two of these had mitral stenosis; there appeared to be no relation between the conditions. On the other hand, so-called "rheumatic pains" in the middle-aged patient were very common.

Syphilis.—The Wassermann reaction, which was performed on most cases, was always negative.

Associated cardiovascular disease.—In this series 14 patients had signs of cardiovascular disease, 10 having high blood pressure and 4 mitral stenosis; the remaining 38 gave no evidence of structural disease. In the majority, therefore, the pain is the main feature, and no recognisable cardiovascular disease is present; statistics on this point are given later.

Immediate causes.—Though the onset is nearly always gradual and scarcely noticed, pain is occasionally described as follows: Case 26 had pain suddenly during the night following a cricket match in which he had bowled for three hours continuously. Case 16 after reaching up with the left arm for a book had sudden pain under the left breast which caused her to faint.

Symptoms.

Pain.—The patient becomes gradually aware of a discomfort in the region of the left breast, in some cases also at the angle of the left scapula. The pain is variously described; when continuous it is said to be a dull ache, a soreness, a weight, or a gnawing pain; when intermittent in character it is sharp, cutting, a prick, a stab, or a shooting pain. It is often said to radiate round the ribs or through to the left scapula. The relation to exertion is indefinite, perhaps it is felt most commonly when the patient is tired, after exertion; it is seldom induced by effort, though the constant pain may be accentuated by it; it is felt at rest and in bed at night. It is very rarely of great severity, though in five of the series it was momentarily sufficiently bad to cause loss of consciousness. Patients generally agree that rest improves the symptoms, whereas work, exertion, excitement, and fatigue aggravate them; some will even volunteer that they get relief from movement, especially those who get the pain at night and cannot rest in bed. There are seldom the secondary effects such as sweating, pallor, which are expected in severe forms of pain. Tenderness of the skin is often a complaint; a patient will say that during an exacerbation the pressure of the clothes gives discomfort.[8] If the pain has been of long duration the patient will

have had considerable intervals of relief followed by relapses.

It is important at this point to realise that the associated phenomena are most helpful in arriving at a diagnosis. Gallavardin[9] has said: "The general impression left the physician is the extreme diffuseness of the manifestations; there are so many things that there are too many."

Exhaustion.—A symptom on which Mackenzie[10] laid stress is nearly always volunteered by the patient without questioning and it is often complained of quite as bitterly as the pain; this feeling is independent of work done and is claimed to be quite different from natural fatigue after exertion.

Dyspnœa on effort of a moderate degree is also a common complaint, as would be expected in the

FIG. 2.

Polygraphic record of the sighing breathing common to left inframammary pain.

lowered condition of health of which it can be an expression; with associated overweight it may be considerable. In contrast with exhaustion, for instance, dyspnœa is seldom mentioned until the routine inquiry is made.

Deep sighing respiration (see polygraphic record in Fig. 2).—Dyspnœa on exertion must not be confused with this symptom, named "suspirious" by the older writers—for example Walshe[11]—and fully appreciated by them as a "neurosal" disturbance.[12] Modern writers refer to it in such terms as "deep sighing respiration," "inability to take a full breath," "an unsatisfying breath," "irregular sighing respiration." This is a very common symptom in patients with left inframammary pain, notably at rest, not on exercise. Gallavardin[13] has commented on this association, and has noticed while screening patients during an attack that there appears to be a spasm of the diaphragm.

Palpitation.—This is a symptom in about 60 per cent. of patients, but not a very prominent one, except where there is associated high blood pressure or with much tachycardia.

Dyspepsia.—About 31 per cent. of patients complain of dyspepsia usually in the form of flatulence. This is of interest since it is common to hear this type of pain loosely ascribed to indigestion.

Pains elsewhere.—Complaint of pains and stiffness in other parts of the body is elicited from the majority, but on questioning only, since the pain under the left breast is, to the patient, by far the most important symptom.

Fainting and faintness.—Fainting, that is actual loss of consciousness, is unusual in this condition, although the pain was sufficiently severe to cause it in five of my patients. Feelings of faintness unassociated with pain, and particularly following exertion, often came with the long list of complaints.

Insomnia or disturbed sleep is a common association, there is generally no reason offered. In a few the pain may be the cause; they say "They don't know which way to lie"; and may get relief from walking about. In some we hear of a feeling of "sinking through the bed."

"*Nerves.*"—It is the rule for these patients to state that "My nerves are bad."

Giddiness.—Patients will often say they are giddy; this, on inquiry, is found to be a sensation of swimming or floating, not true rotation; the patient feels the ground is not firm beneath the feet.

Trembling and shaking.—This is a frequent complaint, often said to come in attacks.

In this condition where the diffuseness of the symptoms is the cardinal feature, the patient may not confine herself or himself to the complaints enumerated above, and such phrases as a "choking sensation in the throat," a "feeling of suffocation," "pins and needles in the limbs" will be familiar to everyone. Sir Clifford Allbutt[14] has said, referring to left inframammary pain "these faintnesses, palpitations, gaspings, stiflings, bodily agitations, hyperæsthesias, and psychical commotions are so wholly unlike the ruthless grip of angina pectoris as these frantic alarms are unlike its silent passion."

Physical Signs.

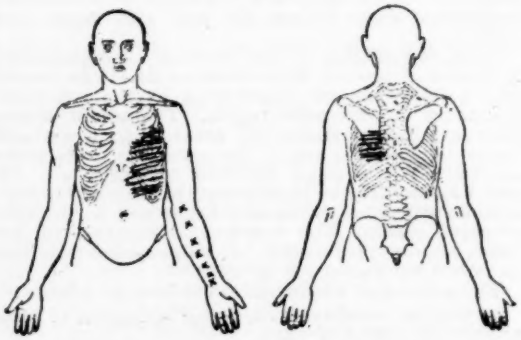
Signs were necessarily few as symptoms constituted the essential feature in this condition. X ray and electrocardiographic examinations gave results within normal limits the Wassermann reaction, when tested, was without exception negative and nothing abnormal was found on investigation of the urine.

Blood pressure on first examination often showed a fairly high systolic reading; this seemed to be accounted for by the nervousness of the patient, as subsequent readings, except where the patient was admittedly suffering from high blood pressure, were within normal limits.

The pulse, taken with the patient both standing and lying, was found in the majority of cases to be of a moderate rate. In this series 25 per cent. only had tachycardia, which did not appear to be a feature of the condition. It is true that on first examination the pulse was often found to be rapid; this was attributable to the nervousness of the patient, as in the case of the initial blood pressure reading. The suggestion that these patients show an abnormal increase in rate on changing from the sitting to the standing position was not confirmed.

Hyperæsthesia proved a valuable sign and was positive in 68 per cent. of the series of both old and

FIG. 3.



(Case 24). Sites of pain are indicated by a cross. The shaded area is hyperæsthetic.

new. It was elicited by lightly dragging the head of a pin over the skin; the diagrams accompanying the illustrative cases show the usual distribution. The left inframammary region was found to be positive to the test more frequently than the left subscapular region. Tenderness on palpation with the fingertips was found in about 45 per cent.

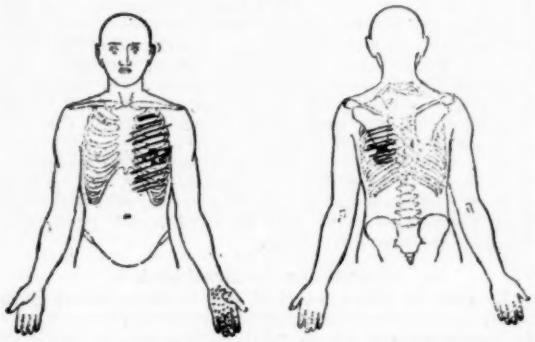
The following are three illustrative cases of long-standing left thoracic pain:—

CASE 24.—A spinster aged 39. In November, 1920 attended the out-patient department of the Heart Hospital complaining of pain under the left breast when tired; it was dull and drawing in character. Two weeks previously, while kneeling in church, she had been suddenly seized by an exacerbation of the pain and fainted. On examination nothing abnormal was found; she was reassured and discharged. In September, 1927, attended again because of a faint in the street. Complained of pain under the left breast at the left scapula, and in the left arm; an ache felt during

exertion, after exertion, and sometimes at rest. Other complaints were undue exhaustion, shortness of breath. Examination again negative. In April, 1929, attended by request. She felt better, but still had pain when tired or sitting at the end of the day; had also had five attacks of pain at night. Other complaints were great exhaustion, difficulty in taking a full breath. Examination: a thin, anxious woman. Nothing abnormal was found in the cardiovascular system. Pulse-rate 80 and regular. Blood pressure, 120/80. Hyperæsthesia to the head of a pin drawn lightly over the skin, and tenderness to palpation with the fingertip (Fig. 3).

CASE 1.—A married woman aged 53. In February, 1915, attended the out-patient department of the Heart Hospital complaining of pain below and above the left breast with a dead feeling down the left arm; it was almost continuous,

FIG. 4.



(Case 1). Sites of pain are indicated by a cross, shaded areas are hyperæsthetic. Feeling of "deadness" over the dotted area.

made worse by exertion and improved by rest in bed. Other complaints were palpitation, exhaustion, shortness of breath on exertion, loss of appetite, and poor sleep. On examination nothing abnormal was found. The patient continued to attend on and off till 1920, being treated with drugs, liniments, and plasters. In October, 1920, she was again completely re-examined; nothing abnormal being found she was reassured and discharged. In April, 1929, attended again by request. She still complained of pain, and now sometimes it was felt under the left shoulder-blade. Other complaints were undue exhaustion, bad palpitation, flatulence, and a difficulty in taking a deep breath. Examination: a stout woman of good physique. Nothing abnormal was found in the cardiovascular system. Pulse-rate 80 and regular. Blood pressure 160/95. Hyperæsthesia and tenderness to pressure (Fig. 4).

CASE 8.—A spinster aged 32. In March, 1920, attended the out-patient department of the Heart Hospital complaining of "pain at the heart"; it was continuous and spread to the left elbow, causing a feeling of loss of power in that arm. Other complaints were undue exhaustion, palpitation, shortness of breath on exertion, and indigestion. On examination nothing abnormal was found. Patient continued to attend, always with the same complaints. On one occasion note is made that the pain was felt at the left scapula, and she was unable to lift her arm to do her hair. In April, 1920, she was again completely re-examined, nothing abnormal was found, and she was reassured and discharged. In April, 1929, attended again by request She still complained of the pain, but it was not so severe now as it used to be; it was generally sharp and shooting in character, shooting round the line of the ribs to the angle of the left scapula. Other complaints were great exhaustion, severe palpitation, nerves bad, and a difficulty in taking a satisfactory breath; "have to take deep sighs." Examination: a thin anxious woman, with a continuous coarse tremor of the hands. Cardiovascular system normal. Hyperæsthesia and tenderness to pressure (Fig. 5).

Statistics of a Series of Consecutive Cases.

Out of 332 consecutive cases attending the out-patient department of the National Heart Hospital, it was found that 42·3 per cent. presenting no evidence of cardiovascular disease complained of left inframammary pain, whereas only 22 per cent. of those with organic disease suffered in this way. The statistical significance of these figures is that a patient suffering from this type of pain is more (not less) likely to be normal so far as the heart condition is concerned.

A further consecutive series of 266 was collected comprising normal patients and those suffering with high blood pressure or mitral stenosis; these latter conditions were chosen as representing the

TABLE I.—*Total Cardiovascular Cases.*

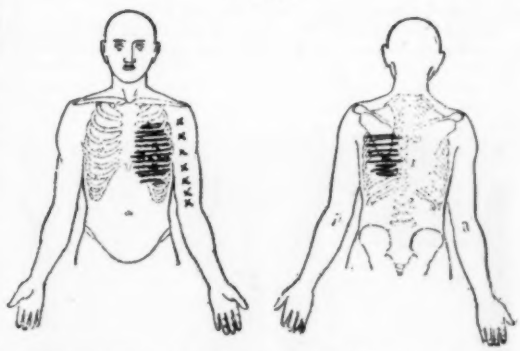
—	Pain.	γ^2	P.
	Per cent.		
Normals	42·3	15·3	0·0015
Cardiacs	22·0		

TABLE II.—*Mitral Stenosis and Blood Pressure Separately.*

—	Pain.	γ^2	P.
	Per cent.		
Normals	43·6	—	—
Mitral stenosis ..	22·0	9·5	0·0236
Blood pressure ..	33·3	0·8	0·8100

commonest cardiovascular diseases. It was found that of 43 per cent. normal patients, 63 per cent. gave this pain as their chief complaint and 37 per cent. as one of other symptoms; of 22 per cent. with mitral stenosis, 12·5 per cent. only gave it as their chief complaint, the rest mentioning it among other symptoms. Of 33 per cent. with high blood pressure, 57 per cent. gave it as their chief complaint, the others as one of other symptoms. The statistical significance of the percentages 43 per cent. normal,

FIG. 5.



(Case 8). Sites of pain are indicated by a cross, shaded areas are hyperæsthetic.

22 per cent. with mitral stenosis, and 33 per cent. with high blood pressure, is the same as for the first series—namely, that a patient suffering from this type of pain is more likely to be normal and less likely to be suffering from either high blood pressure or mitral stenosis.

Diagnosis and Differential Diagnosis.

The diagnosis is based chiefly on the site and type of the pain, with its indefinite onset as opposed to the paroxysmal character of the attacks in angina pectoris, and an absence of any direct relation to exertion. In addition there is a diffuse array of symptoms largely of a nervous order and dependent on a lowered condition of general health. Further there is an absence of physical signs unless there happens to be associated cardiovascular disease, and negative results from electrocardiographic and X ray examinations. The presence in the majority of

hyperæsthesia and tenderness in the inframammary and subscapular regions is confirmatory evidence. In differential diagnosis it is of first importance to distinguish this condition from true cardiac pain. This presents no real difficulty except where there is extension of the pain into the left arm. The following Table has been assembled to contrast the two conditions.

Differential Diagnosis from Angina Pectoris.

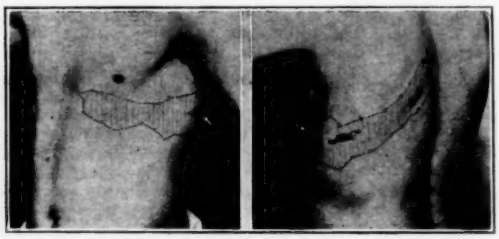
Angina Pectoris.	*Left Inframammary Pain.*
1. Commoner in men.	1. Far commoner in women.
2. Occurs during effort or excitement; effort is limited by pain.	2. Occurs any time, especially during fatigue; effort is limited by exhaustion rather than pain.
3. Pain in brief paroxysms, onset and offset abrupt; the paramount symptom.	3. Pain generally continuous, lasting weeks or months with intermissions, onset and offset gradual, duration indefinite: one of many symptoms.
4. Site of pain sternal, or across the chest, extension supramammary or brachial; spinal distribution C8, D1, 2, 3, also 4.	4. Site of pain left inframammary extension to left scapula, less often supramammary, rarely and slightly left brachial; spinal distribution DV, and VI.
5. Aspect expresses great pain.	5. No outward aspect of pain.
6. Hyperæsthesia none or only following a paroxysm.	6. Hyperæsthesia common and persistent, especially in long-standing cases.

Other Sources of Pain in the Left Inframammary Region.

It is, of course, recognised that pain under the left breast can be a manifestation of a pathological change in the structures of the chest wall and the organs and tissues, other than the heart, contained therein. When due to a local lesion the clinical picture and course is not that described in this paper, and the associated signs and symptoms are absent.

Herpes zoster (see Fig. 6), as mentioned by Balfour[15] in 1898 can, before the appearance of the characteristic

FIG. 6.



Herpes zoster (D. VI. left) with area of hyperæsthesia to dragged pin-head.

eruption, give pain under the left breast and at the angle of the left scapula. Again, myalgia and myofibrositis of the muscles of the chest wall, sometimes called pleurodynia, gives pain in this area; G. R. Murray[16] has recently shown how this condition may readily be diagnosed. To give yet one further example, Vaquez[17] has described a cellulitis of the præcordial region due to continual fingering of the part by the patient; tender patches of induration can, he says, be found on examination.

Other conditions that should be mentioned are acute pleurisy, recognised by the "catch" in the breath and associated "rub," or if the result of chronic pleurisy and fibrosis of the lung, by X ray examination. Intercostal neuralgia gives pain along the main distribution of an intercostal nerve. Pain due to lesions involving the lower end of the œsophagus and cardia of the stomach is described in detail by Bolton.[18] According to Pottenger[19] and others the innervation of the stomach, liver, and pancreas is from D.V to IX, an area including that under discussion—namely, D.V and VI. Among the rarer causes of left inframammary pain the following might be enumerated: mastitis of the left breast; osteo-arthritis of the spine, recently discussed by Gunter and Sampson;[20] disease affecting locally the posterior spinal nerve roots as aneurysm, neoplasm, or tuberculosis of the spine; fracture or periostitis of a rib; pneumothorax, mediastinitis, chronic and acute, and intrathoracic neoplasms involving structures of the mediastinum.

After-history and Prognosis.

The after-histories of the 32 cases whose records go back over a number of years show that these patients have had long remissions from their pain, but that they have had relapses coinciding in the majority with some illness, extra physical or mental strain, or reduced condition of health. For the most part they still have the pain at times, though in one case only has it got progressively worse. The prognosis as to life is good, the condition appears not to be dependent on any underlying cardiovascular disease, nor need the patient develop other signs or symptoms over a considerable period of years. The prognosis as to relief of pain is not so satisfactory, the trouble is very obstinate as regards treatment, and although long periods of relief can be confidently predicted, relapses are prone to occur.

Suggestions for Treatment.

It must be admitted that left inframammary pain often proves very resistant to treatment, particularly in long-standing cases, who seldom lose it entirely and in whom it tends to recur; the earlier after its onset the patient comes under treatment the greater the prospect of success. Probably the most satisfactory results are obtained with patients who are quick to accept the assurance that the pain has no relation to the heart. As the trouble is frequently associated with a lowered condition of health, mental strain, or overwork, much benefit results from rest, the pain improving and in some cases disappearing after a few days in bed. Where mental strain is the chief factor, inquiry should be made to see if any personal or domestic worry can be lightened. A holiday with a balanced amount of rest and exercise, fresh air, and tonics may be advised with good results. Any obvious focus of infection should naturally have attention. Excessive smoking seems to be a potent cause in some cases, and abstinence will often be necessary to obtain a cure. Of drugs, that which seems to have the most effect is bromide; little if any relief is got from the use of the usual analgesics, such as aspirin, phenacetin, phenazone, &c. Local measures are not advisable, as they tend to centre the patient's mind on the heart, a thing particularly to be avoided. Plasters have been freely used in the treatment of this complaint, with, however, no permanent relief of symptoms; one patient who had been plastered over a period of 11 years still had his pain. Similarly, massage has been recommended for the painful parts, but the results again do not support its use.

Summary.

Left inframammary pain is a very common symptom in patients without physical signs of disease, but with a group of symptoms expressive of physical or nervous exhaustion. It not infrequently leads to an erroneous diagnosis of heart disease, even of angina pectoris. Thirty-two cases have been studied whose records show that their condition has been one of long standing, together with 20 illustrative examples, with this pain as the main symptom. Further, the histories of 332 consecutive patients attending the out-patient department of the National Heart Hospital have been analysed, and it has been found that no less than 22 per cent. gave it as their chief complaint, and a further 20 per cent. included it amongst their symptoms. The condition is far

commoner in women than in men, affecting them in adult life, especially at the menopause. The pain is of gradual onset, and continues for weeks or months with intermissions, often over years. It may extend to the left scapula, less often to the supramammary region, or even to the left arm; this left brachial extension was found in 17 of the 32 cases showing long records; it may then simulate angina pectoris with which it has nothing else in common. A striking feature is its association with the symptoms indicative of nervous exhaustion and general ill-health, the most permanent symptoms being undue fatigue, nervous disturbances in breathing, and palpitation. The most significant physical sign, indeed almost the only one, is the presence of hyperæsthesia of the skin and tenderness of underlying tissues in the region of the left breast and the subscapular region. Signs of cardiovascular disease are not found, except when such common conditions as mitral stenosis and hyperpiesia happen to coexist. The distinction from angina pectoris rests upon the character of the pain and its site, the absence of a direct relation to exertion, and the lack of supporting physical signs after years of pain. A table of differential diagnosis is given. The prognosis as to life is good, as there appears to be no organic basis for this pain; but it is obstinate and very liable to recur, though it does not progress as does angina pectoris. Treatment is unsatisfactory, but the best results are obtained by reassurance, rest in bed for a time, improvement of the general and nervous health, a course of bromide, and if possible a holiday.

NOTE BY DR. JOHN PARKINSON.

A persistent aching pain below the left breast is so common a complaint and so liable to misinterpretation that Dr. Baker's study is sure to prove of wide interest. Now that coronary thrombosis is distinguished from angina of effort it is more necessary than ever to separate clearly from angina pectoris (in either form) these imitations of true cardiac pain. Left inframammary pain, especially if there is slight extension to the left arm, undoubtedly comes most often into such differential diagnosis. The original site, the absence of direct relation to effort, and the associated symptoms are here shown as a clinical complex in striking contrast with angina. Hyperæsthesia is found to be more common and more persistent than in coronary angina. The underlying nervous and general exhaustion, coming to the surface as a "heart-ache" instead of a headache, is treated best by moral support, reassurance, and rest; then by holiday and wholesome exercise.

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POST-ENCEPHALITIC PARKINSONISM AND MILITARY PENSIONS.*

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PENSIONS boards often find it very hard to decide whether post-encephalitic parkinsonism is or is not to be imputed to military service. This question is of the greatest importance, but I have found no information on it in English medical works. In France it is dealt with in the following way.

Determination of the Origin of Encephalitis.

Post-encephalitic parkinsonism generally occurs a year or two after the onset of encephalitis, or even three, four, five, or more years later. The expert endeavours to find out whether a bradykinetic syndrome [1] can be attributed to an encephalomyelitis contracted during the period of military service or not. The first difficulty is to determine the beginning and the signs of this primordial encephalomyelitis, for opinions are not always in agreement. It was for some time held that, encephalitis having only been described at the end of 1916 or the beginning of 1917, all Army patients who ascribed the beginning of their illness to an earlier date could not have encephalitis, since it did not then exist. This opinion is no longer accepted, as I have been able to demonstrate,[2] that cases were in existence on the French front as early as 1915 in the region of Commercy and Verdun, later in Bar-le-Duc from 1916 to 1917.

The case recorded by Arthur J. Hall[3] in 1924 is particularly significant. It is the case of a soldier aged 37, sent home from the Anglo-French front in 1916, and considered to have an "atypical" paralysis agitans. It was not until 1918 that he made the correct diagnosis. It is probable that the beginning of the illness was earlier than 1916, the date of the first examination.

There is a growing tendency to think that encephalitis arose in the war zone from 1914, but was at first unperceived and developed, especially in the eastern region. From there it was diffused over the different fronts by the movement of troops and spread to the various parts of the world. Maximilian O. Pfister,[4] in an article dated June 28th, 1929, supports this opinion as regards the appearance of encephalitis in China; he refutes Watson's hypothesis according to which the first case, a completely isolated one, was noted in Yunnam in 1915, and the disease was propagated from there in China from 1918 and 1919. According to Pfister, it was the Annamite troops, engaged in the district of Verdun in 1915, who brought the malady back to China at the time of their repatriation, beginning in the autumn of 1915. Encephalitis first broke out in the ports of Annam and was progressively disseminated through the whole country, following the most frequented commercial routes.

The Diagnosis of Encephalitis is not Necessary to Establish a Causative Connexion.

Diagnosis is only of use to the expert in so far as it allows him to appreciate the damage caused—that is to say, the degree of disablement. A diagnosis of encephalitis is not really indispensable. The Ministry of Pensions simply wants to know whether the infirmity may be attributed to service. They must then know if there is causative connexion between the present state of parkinsonism and a cause of whatever kind during the period of active service. There are a number of military men who returned home in perfect health and in whom the first symptoms of encephalitis did not manifest themselves until long

* Read on June 6th at the Naval, Military, and Air Section of the Congress of the Royal Institute of Public Health in Portsmouth.

after their demobilisation; in those cases causative connexion cannot exist and the imputation is inadmissible.

Therefore the demonstration of a causative connexion is the essential point and is sufficient to cause a pension to be awarded to a soldier suffering from parkinsonism, although it may be impossible to attribute the disorder to an encephalitic origin.

In certain cases the diagnosis of encephalitis is simple, for instance, in the lethargic type. When one finds in the history of a parkinsonian soldier during active service fatigue and somnolence, fever, even though moderate, disordered vision, and especially diplopia, the problem is solved; the pension is always awarded. But such characteristic symptoms are not always found. Should traumatism and concussions, febrile states, especially influenza, malaria, and other causes be rejected, or must they be called "encephalitis," which at the time escaped recognition? The only essential fact is that the causative connexion should be obvious; consequently each case must be carefully studied in order to find out, by close examination, if this connexion is evident to the expert.

Original Causes of Post-encephalitic Parkinsonism.

The most typical and usual cause is influenza; it is a well-established fact that the most serious outbreak of epidemic encephalomyelitis coincided in 1918 with influenza. According to certain authors, epidemic encephalomyelitis is only one of the nervous forms of influenza. Dr. F. G. Crookshank [5] defended this view as early as 1919, bringing forward arguments based principally on the history of epidemiology for the last 450 years. For him epidemic encephalomyelitis represents the nervous form of influenza in adults, while epidemic poliomyelitis is the nervous form of influenza in children. As a result of the 1929 report of the American Matheson Commission [6] on epidemic encephalitis, the majority of authors do not to-day share this opinion. The arguments against it may be summarised as follows.

Influenza is essentially contagious. Encephalitis is scarcely so. Nothing suggests a constant relationship between the two diseases. The ideas suggested by epidemiology permit us rather to oppose the one to the other. It is difficult to pronounce judgment on the identity or the difference between encephalomyelitis and Medin's disease. The cases of poliomyelitis observed at Bordeaux were exceptional, whereas in outbreaks of epidemic poliomyelitis or Medin's disease myelitic lesions are the rule and encephalitic lesions the exception.[7]

These divergences of opinion, which persist to-day, are interesting but unimportant. To an expert it is simply a question of nomenclature; whether we call the initial symptoms nervous influenza, epidemic encephalomyelitis, or poliomyelitis, the mere fact that they were in existence and that the causative connexion with the later parkinsonian syndrome can be established settles the question from the legal point of view, and the pension must be awarded. It is well known that many cases of influenza have thus been judged, such as that of Mayet and two other cases of my own.[8]

Another disease, often suspected, is typhoid fever. As early as 1917 I remarked, with Moutier and Calmettes,[9] that a typhoid condition was legitimately ascribed to those tired and asthenic soldiers returning from the Army. The biological tests were always negative, it is true, but they might have been positive in a few cases, as Marc Etienne May and M. Kaplan have indicated. These authors record hypertonia and forms of encephalitis in true typhoid fever. The characteristics which they mention are analogous to those which we observed in our first patients in 1917 at the beginning of their disease.

In other cases we thought at first of atypical cerebro-spinal meningitis or of the polymorphic psychoses, especially dementia præcox, which later show a parkinsonian syndrome. Why should we deny the possibility of cerebro-spinal meningitis or psychosis of any kind turning into a parkinsonian syndrome? In fact, we must accept the causative connexion if we can follow the morbid phases from the beginning to the parkinsonian sequela.

Certain experts have refused to admit a connexion between malaria and the parkinsonian sequela. There is, however, no reason to deny it, if the causative sequence can be proved. I have noted several cases in which the malarial origin has been accepted, among them that of Bériel and Mayet, and another in my own experience.

In this case the characteristics of parkinsonism began to appear in December, 1921—that is, about 19 or 20 months after the attack of encephalitis, a normal length of time; they manifested themselves in difficulty of movement, stiffness and slowness at work. In February, 1922, they were very clear and Prof. Cestan (of Toulouse) diagnosed encephalitis with parkinsonism, which grew worse later on. But can this parkinsonism syndrome be connected with active service in the relation of cause and effect? One fact is clear, that the attack of encephalitis in February, 1920, began like one of those malarial crises which had already attacked the patient at Salonica, where he was in hospital from April 9th to May 18th, 1918: uneasiness, shivering, chattering of teeth, and high fever. These symptoms were followed after some hours by profuse perspiration with subsequent comfort, but on the following days the signs reappeared and this condition—at first intermittent—was succeeded by a permanent state of fever which persisted for forty days. Therefore the onset took the form of intermittent fever of a quotidian type—that is, a recurrence of serious malarial symptoms in a former malarial patient, the beginning of whose disease, contracted on active service, dates from 1918.

I saw a similar case in a soldier who clearly had had ten malarial attacks at Salonica before his return to France in January, 1919. He had no further attack until his demobilisation in November, 1919. In January, 1919, he had a bad attack with shivering, chattering of the teeth, and hyperthermia, which appeared to be cured by quinine. Two days after, diplopia and somnolence appeared, while the fever abated. This was the beginning of encephalitis, which had first manifested itself under the appearance of a malarial attack and later turned into regular parkinsonism, from 1921 to 1922. I consider that here, as in the preceding case, there is undeniably a connexion between the malaria contracted in the Army and encephalitis complicated later by a parkinsonian syndrome.

Diffuse meningo-encephalitis is admitted as a sequela of malaria by the ablest authors on tropical medicine. I will confine myself to quoting the opinion of Prof. A. Le Dantec [10] who, in the latest edition of his remarkable précis, concludes that the right to the pension is undoubted in two cases.

The same may be said for trauma and concussion. It is well known that Parkinson's disease has sometimes been provoked by similar causes.

I had a case of that kind in December, 1926. It was the case of a quartermaster, badly concussed by a shell in July, 1917, who, in spite of violent shock, remained at the front until October, 1919. During all this time he complained unceasingly of headache, was continually depressed, and resigned his position as quartermaster. About six months before demobilisation he showed a tremor, at first slight, which grew steadily worse, his movements becoming more and more difficult and slow, especially on the right side; he took several holidays and when he was finally examined in August, 1924 a parkinsonian syndrome was recognised which predominated on the right side, with rigidity, a mask-like face and tremor of the left hand. In May, 1926, the expert first accepted the causative connexion between the original concussion of 1917 and the present parkinsonian syndrome. It seems difficult not to agree.

There is no reason why poisoning should not be incriminated. It is well known that at first, especially in England, botulism was held responsible. Indeed, one cannot refuse the pension if a causative connexion exists between the supposed poisoning or intoxication contracted while on active service and the later parkinsonian syndrome.

The Original Cause is Indefinite.

To discuss other and rare cases seems superfluous. The essential fact is that the initial cause may be impossible to define, and yet, because it has been observed, it should be sufficient, if there is a causative connexion, to determine the decision. Among cases

of this type, in which retrospective diagnosis was impossible, are the following.

A draughtsman, aged 46, came to me for the first time on August 5th, 1926. A diagnosis of post-encephalitic parkinsonism was obvious from the characteristic mask-like expression, inertia, wooden immobility, and monotonous speech. I saw him several times in September, 1926, and in November, 1928. His condition was always the same. In good health at the time of mobilisation on August 2nd, 1914, he had remained so until July, 1916. At that time, being in the neighbourhood of Beauvais, he had been removed from that town to a dressing-station, where he had remained for a month suffering from agitation, mental excitation, and trembling of the upper and lower limbs. His writing had become almost illegible and his speech jerky and explosive. Since then he has been unlike his former self; excitable, talkative, irritable, with a great need for activity, finding it impossible to stay in one place, walking about incessantly, even making magnificent and exaggerated plans for the future. In May, 1917, myoclonic spasms appeared in the limbs and were so violent as to wake him in the night and shake the bed. These spasms continued after demobilisation (March, 1919), and for the two following years. In November, 1919, somnolence and diplopia appeared; the latter disappeared in December but the somnolence persisted until February. He became less and less voluntarily active; he drew badly and was obliged to have an employee to take his place. The myoclonic spasms diminished, then disappeared at the end of 1921. Finally, in November, 1923, after financial difficulties, he sold his draughtsman's business.

Several doctors whom he consulted diagnosed encephalitis. My conclusion is that the origin of the encephalitis, which apparently dates from the period of somnolence and diplopia in November, 1919, is certainly earlier. It may be said that since July, 1916, the time of the patient's removal and treatment at Beauvais, he has been continually ill. Therefore it is only logical to refer the origin of the encephalitis back to the mental symptoms manifested since July, 1916. Consequently, I conclude that the origin of the present post-encephalitic parkinsonism dates from July, 1916, —that is, from the time when the patient was in active service. As I requested in my report, the pension has been awarded.

These considerations, based on precise facts, show how many complex and delicate problems are raised by this question of the claim of parkinsonian patients to military pensions.

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WOOLWICH MEMORIAL HOSPITAL.—Last year the number of in-patients rose from 1293 to 1850, who cost an average of £4 3*s.* per week, a slight increase upon the previous year.

HONORARIUM TO A HOSPITAL MEDICAL STAFF.—The governors of St. Albans Hospital have decided to grant this year the sum of £150 to the honorary medical staff. The amount was settled in consultation with the medical men concerned, and is subject to periodical revision. Last year there were 544 in-patients, an increase of 90; their average stay was 20·70 days. Road accidents were responsible for 123 in-patients—more than 20 per cent. of the total—and 180 casualty patients. The in-patients cost £3 1*s.* 10*d.* per week.

PARALYSIS OF THE LAST FOUR CRANIAL NERVES IN TABES DORSALIS.

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THERE are few cases of tabes dorsalis which do not show, sooner or later, evidence of involvement of the cranial nerves in addition to the usual spinal manifestations of the disease. Some degree of trigeminal anæsthesia is almost invariably found in the moderately advanced case, and strabismus, optic atrophy, and deafness are all quite common. But while some cranial nerves fall victims to the disease very readily, others appear to enjoy a high degree of immunity, and it is but rarely that the glossopharyngeal, spinal accessory, or hypoglossal nerves are affected. It is for this reason that the present case, in which the last four cranial nerves on the right side have been affected, is deemed worthy of record.

A chemical worker, aged 49, was first seen in the out-patient department at the Liverpool Royal Infirmary in July, 1928, and was later admitted to the hospital.

In 1903 he had had a urethral discharge but no chancre had been noticed. His only other illnesses had been recurrent tonsillitis and quinsy in 1917, and an attack of abdominal pain and hæmatemesis in 1922, following a prolonged period of dyspepsia. He had been married for 22 years and had had seven children, all of whom were alive and well. There had been no miscarriages. He had enjoyed very good health for several years before the onset of the present condition, except that for 18 months he had noticed occasionally a sensation as of "walking on air." Dysphonia had first been noticed in April, 1928, after a severe cold and sore-throat, and had been quickly followed by dysphagia. Food had appeared to stick at the level of the manubrium sterni and very soon he could only with difficulty swallow fluids. Regurgitation into the nose had occurred occasionally. There had been a constant tickling sensation in the throat, but no pain. In May he had first experienced lightning pains of some severity in the legs. In June pain had been felt under the right clavicle, and on looking at himself in a glass he had noticed what he described as a "different formation" of the right shoulder. His weight had fallen from 9 st. 2 lb. to 7 st. 8 lb.

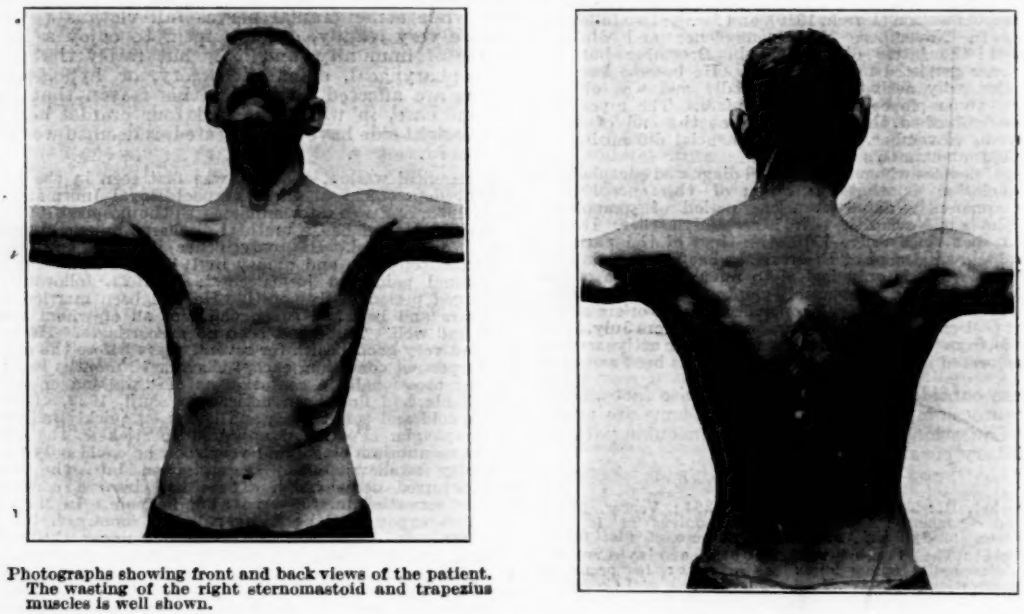
When first seen he presented a worn and emaciated appearance. His voice was husky and there was a frequent and ineffective bovine cough. When stripped, the deformity and dropping of the right shoulder was obvious, and further examination showed this to be due to considerable atrophy of the sternomastoid and trapezius. There was marked hollowing above the clavicle, and the right scapula was displaced outwards and slightly downwards. Measurement showed the distances from the superior and inferior angles to the vertebral spines to be respectively 4¼ in. and 3 in., as compared with 3¾ in. and 2¾ in. on the normal side. The scapula as a whole was half an inch lower than its fellow. The muscles, in spite of their atrophy, responded well to faradism and galvanism, though in the sterno-mastoid the anode closing contraction was equal to the kathode closing contraction.

Examination of the pharynx revealed weakness of the right half of the soft palate, the uvula being drawn over to the left on phonation. The pharyngeal wall and fauces were hypersensitive and the reflex response to stimulation excessive. This hypersensitivity was, however, less marked on the right side. The tongue deviated slightly to the right on protrusion but there was no atrophy or tremor. Common sensation was normal over its surface, except over the right posterior third where there was some impairment. Taste was examined with test solutions of sugar, salt, acetic acid, and quinine. This sensation was completely lost over the right posterior third. It was present over the rest of the tongue but there was often considerable delay before a given test solution was identified. Inquiry revealed no subjective alterations in taste or smell. The fifth, seventh, and eighth nerves were functioning normally. There was slight double ptosis. The eye movements were normal and there was no nystagmus. The pupils were small, the right more so than the left. Both showed some irregularity, and the reaction to light was

absent on the right side and only feebly present on the left. Accommodation was brisk. The cilio-spinal reflexes were absent. There was no impairment of visual acuity and the optic fundi and visual fields were normal.

Otherwise there were no signs of nervous disease. The gait was normal, there was no rombergism, no ataxia, and no alteration in muscle tone. The knee-, ankle- and arm-jerks were all brisk and the plantar reflexes flexor. The abdominal reflexes were present. There was no sphincter disturbance. The varieties of sensation examined were touch, tactile localisation, temperature, superficial and deep pain, vibration, joint, and testicular, and all were found to be normal. There were no trophic disturbances. No evidence was found of any lesion outside the nervous system apart from slight arterial thickening. The pulse-rate varied from 70 to 100 and the heart was normal.

Laryngoscopy showed complete paralysis of the right vocal cord with some abduction paralysis of the left. Œsophagoscopy revealed no structural disease of the pharynx or œsophagus. Radiographic examination of the œsophagus showed obstruction to the passage of the test paste in the post-cricoid region, the appearances being indistinguishable from those usually produced by malignant disease. The contour and movements of the stomach, as seen under the screen, were normal, as also were the movements of the diaphragm. The electrocardiogram was normal in all leads. The serum Wassermann reaction was negative. In the cerebro-spinal fluid the protein was increased and the cells numbered 20 per cubic millimetre, all lymphocytes. The Wassermann reaction was strongly positive in 1 c.cm., 0·5 c.cm., 0·2 c.cm., and 0·1 c.cm. Lange's gold curve showed a luetic zone.



Photographs showing front and back views of the patient. The wasting of the right sternomastoid and trapezius muscles is well shown.

Progress.—The patient has been subjected to anti-syphilitic treatment and there has been considerable subjective improvement. He has gained weight and has now been free from lightning pains for over a year. The physical signs have, however, altered but little. The deviation of the tongue is now hardly noticeable, but the atrophy of the sternomastoid and trapezius is more pronounced than when he was first seen. His diet is still a fluid one, and the huskiness of his voice indicates the persistence of the laryngeal paralysis.

Discussion.

The diagnosis of tabes in this case has been based on the history of lightning pains, the pupil changes, and the serological findings, and is felt to be justified in spite of the absence of objective evidence of posterior root involvement. The marked affection of the cranial nerves stands out in contrast to the slightness of the other indications of the disease.

Judging from the scant reference to the glosso-pharyngeal nerve in the literature of tabes one is tempted to assume that it is practically immune to the encroachments of the disease. But if positive findings of glossopharyngeal damage are lacking from the case reports, negative ones are almost as conspicuously absent, and it seems not improbable that the apparent rarity of lesions of this nerve is at least partly due to the fact that such lesions are but seldom sought. Loss of appreciation of taste in the posterior third of the tongue is perhaps the most conclusive evidence of a glossopharyngeal lesion, but the majority of writers seem to have neglected the systematic investigation of the gustatory functions. Thus, though Grabower[1] found the glossopharyngeal nerves degenerated in his case of tabes with bulbar paralysis, he makes very little reference to the integrity or otherwise of the sense of taste during life. Pfeifer[2] investigated a tabetic showing marked bulbar signs with special reference to the taste function, and found that there was delayed appreciation of taste but that the sensation was nowhere completely lost. He reviewed all the previously reported cases of tabetic bulbar palsy and comments on the almost complete absence of adequate reference to taste.

Whatever doubts may be felt as to the rarity of lesions of the glossopharyngeal nerve in tabes, the infrequency of paralysis of the spinal accessory can hardly be gainsaid. Græffner[3] has pointed out that some slight degree of atrophy of the sternomastoid and trapezius may not uncommonly be noted in tabetics, and he himself observed it in 25 out of 113 of his cases. Marked paralysis as seen in the present case is, however, an entirely distinct condition and I have only traced 14 examples in the literature. Of these, one only—namely, that of McBride,[4] has been reported in English. The ten cases, occurring prior to 1904, were collected and reviewed by Avdakoff,[5] who added an eleventh, while Davidson and Westheimer,[6] Souques and Chéné,[7] and Léri and Boudet,[8] have reported three further cases. The degree of palsy varies greatly from case to case. In some it is unilateral, in others bilateral; sometimes the trapezius is affected alone, sometimes the sternomastoid. It is interesting to note that the vagus has always been simultaneously affected. In all the cases save one the spinal accessory palsy has only attracted attention after the disease has become well established. The exception is one of Seiffer's[9] cases, where pain in the shoulder and difficulty in swallowing were almost the

earliest symptoms of the disease. In this patient, however, in addition to evidence of spinal accessory and vagus paralysis, the knee-jerks were found to be absent and ataxia rapidly supervened.

Paralysis of the vagus, though not common, is much less rare than that of either of the nerves just referred to, and case reports of tabetic bulbar paralysis in which the vagus has been predominantly affected are fairly numerous in the literature. Graeffner[3] found that minor lesions of the vagus were quite common; 54 cases out of 206 examined showed some degree of vocal cord weakness on laryngoscopic examination, indicating that the larynx is a *locus resistentiæ minoris* in tabes. The severer degrees of vagus palsy are always characterised by difficulty in swallowing.

Pathogenesis.

Any attempt to interpret the findings in terms of pathology is necessarily somewhat hazardous. The pathological process would appear to be fairly circumscribed and the evidence all points to its being peripheral rather than central in its action; a lesion of nerves or nerve roots, rather than of the bulb. None of the long tracts traversing the medulla has been demonstrably affected, and the normal movements of the diaphragm and other respiratory muscles negative any involvement of the respiratory centre, to which the central connexions of the vagus are so intimately related. Moreover, the impairment of the functions subserved by the nerves concerned has been very complete and, to produce such a marked effect, a medullary lesion would have to be so extensive as almost inevitably to involve the long tracts or the respiratory centre. The morbid process would appear, therefore, to be operative outside the medulla and—remembering that the characteristic lesion of the posterior roots has its origin where the latter pierce the dura—it is not unnatural to conclude that in the present case the glossopharyngeal, vagus, and spinal accessory nerves, and to a less extent the hypoglossal, have been primarily affected at the same site. The early separation of the hypoglossal nerve from its neighbours to pass through the anterior condyloid foramen would militate against placing the lesion further peripherally.

No case of tabes where the spinal accessory nerve has been involved has, so far as I am aware, come to autopsy, but the post-mortem findings in Grabower's[1] case are of interest, inasmuch as the glossopharyngeal and vagus nerves were affected, though the spinal accessory escaped. In this case there was slight meningeal thickening and a small cyst beneath one of the cerebellar hemispheres. Microscopical examination showed that, with the exception of degenerative changes in the fasciculus solitarius, the nuclei and central connexions of the vagus and glossopharyngeal were intact. On the other hand, the trunks of these nerves were almost completely degenerated. In view of the clinical findings in the present case it seems not unjustifiable to presume that the underlying pathological condition is of the same nature as that detailed by Grabower, and that the symptoms have been produced by degenerative changes in the nerves themselves and not by any injury to their centres in the medulla.

I gratefully acknowledge Prof. John Hay's permission to publish this case, which was under his care, and am indebted to Mr. H. V. Forster and to Dr. R. E. Roberts for allowing me to quote the laryngological and radiological reports.

Summary.

Unilateral paralysis of the glossopharyngeal, vagus, and spinal accessory nerves is described in an early case of tabes dorsalis. Evidence is put forward for regarding the paralysis as due to degeneration of the nerve roots rather than to disease of the corresponding nuclei in the medulla.

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1. Grabower, H.: Deut. Zeit. f. Nervenh., 1897, ix., 82.
2. Pfeifer, B.: Ibid., 1907, xxxiii., 246.

(*Continued at foot of next column.*)

Clinical and Laboratory Notes.

TREATMENT OF CHRONIC RHEUMATIC DISEASES WITH TRANSCUTAN BATHS.

By O. B. Bode, M.R.C.S. Eng.,
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AND
M. Scholtz, M.D. Breslau,
HOUSE PHYSICIAN TO THE HOSPITAL.

In 1925 our attention was drawn to the transcutan treatment of chronic rheumatic diseases, and last year we decided on careful study of its action and results. The treatment aims at an optimal combination of several therapeutic agents often employed separately in the treatment of chronic rheumatic diseases. It is given in the form of baths, the preparation being added to the water.

Dose 1 contains 34 per cent. inorganic salts (calcium chloride, 80·5; magnesium chloride, 6·6; strontium chloride, 2·1; potassium chloride, 5·1; sodium chloride, 2·6; potassium bromide, 2·3; and lithium chloride, 1·1); 17 per cent. essential oils (turpentine, oil of wintergreen, bornyl acetate); 1 per cent camphor; and 48 per cent. water.

Dose 2 contains 28·4 per cent. inorganic salts (of the same composition as above); 31 per cent. essential oils; 2 per cent. camphor; 39·5 water.

The beneficial effect of brine baths upon chronic rheumatic conditions has long been established. The influence of these baths on the body is probably: (1) by a thermal action, and (2) by the absorption of chemical substances (ions) through the capillaries of the skin.

According to Ryszkiewicz[1] the constituents of the essential oils have some sensitising effect upon the cells of the body. This sensitisation has been compared with the effect of the shock produced by the parenteral administration of protein showing itself in rise of temperature, leucocytosis, and focal reactions.

Method and Results.

The patient is placed into a bath of 36° C. (96° F.), to which, within ten minutes, hot water is gradually added up to a temperature of 39°–41° C. (102°–106° F.). Then the contents of one bottle of transcutan are poured over the surface of the water and distribute themselves uniformly without being stirred. The patient should stay in the bath for another ten minutes. After the bath he is wrapped in a big bath towel and not dried. He is put into bed, where an intense perspiration sets in which lasts for about two hours. During this stage his face should occasionally be dried and a cold compress applied to the forehead. After this sweating he is well rubbed down and has to rest in bed for another six hours. Sensitive parts of the skin, such as the anus and scrotum, should be protected by the application of some vaseline before the patient enters the bath.

The number of baths given in individual cases must be judged by the condition of the patient, and mostly depends on the chronicity of the case. More than ten are rarely necessary. In patients bearing the treatment well a bath can be given every other day. There are two strengths of transcutan baths, and the first one or two baths should begin with strength I. Unpleasant symptoms which the patient may experience at the beginning of the treatment are palpitations, which can easily be relieved by bromide, and increase of pain in the affected parts.

[1] Ryszkiewicz, A.: Zeit. f. Bäderk, 1929, iv., 324.

Dr. R. W. Brookfield: *References.*

(*Continued from previous column.*)

3. Graeffner: Münch. med. Woch., 1907, liv., 1775.
4. McBride, P.: Edin. Med. Jour., 1885, xxxi., 12.
5. Avdakoff, A.: Thèse de Paris, 1906.
6. Davidsohn, E., and Westheimer, B.: Deut. med. Woch., 1904, xxx., 1712.
7. Souques and Chéné, H.: Rev. Neurol., 1909, xvii., 249.
8. Léri, A., and Boudet, G.: Ibid., 1910, xix., 561.
9. Seiffer, W.: Berl. klin. Woch., 1903, xl., 940.

Even elderly patients bear the treatment well, and in cases of hyperpiesia the blood pressure has been noted to fall. Indications for the treatment are: neuritis, especially sciatica, muscular rheumatism (fibrositis), subacute polyarthritis (septic foci should, of course, be dealt with), gout, osteo-arthritis without gross deformities, and joint destructions. Diseases of the skin and disturbances of the circulatory system are contra-indications.

We have treated about 40 cases in the last year. These cases came from our out-patient department and were taken into hospital for this treatment. About ten were private patients who took the baths at home under medical supervision. Most of these patients had been known to us for some considerable time, and all modern methods of routine treatment were tried before the transcutan baths. The number of baths given varied from 2 to 12. No other remedies were employed during the treatment.

Of nine cases of sciatica, seven were cured and two much improved. Of ten cases of fibrositis, eight were cured and one much improved; one, who showed a marked neurotic element, did not respond to treatment. Of 16 cases of subacute arthritis, ten were cured and six much improved. Of five cases of osteo-arthritis all were much improved as regards periarticular swelling, pain, and motility. One case of gout was much improved. We give a few examples.

A man, aged 43, who had had severe sciatica for several years and was walking on crutches, had had all methods of treatment before including intraneural injections. He left hospital after ten baths walking perfectly normally.

A woman, aged 50, known to us for two years, had severe bilateral sciatica, getting worse in spite of all treatment, and for the last few months was only able to walk stooping at almost a right angle. Transcutan treatment was given as a last resource and without much hope. The improvement after twelve baths can only be described as dramatic. The patient left the hospital walking straight with very little discomfort.

A man, aged 33, had recurrent attacks of lumbago after exposure to cold. A severe attack was absolutely checked by two baths.

A woman, aged 39, had severe pains in the muscles of her back and shoulders for a month, and was unable to lift her arms above the horizontal; she was cured and able to do her hair after three baths.

A woman, aged 31, with periarticular swelling of several joints, most marked in the left knee, and occasionally a subfebrile temperature, was discharged without pain and swelling after six baths.

A woman, aged 59, with marked osteo-arthritis with deformities, hardly able to walk, tried the treatment at her own request. Striking improvement as regards pain, periarticular swelling, and movements was obtained after eight baths.

A woman, aged 57, with typical gout, had no pain or swelling after nine baths.

Among our cases we have only had four relapses within several months; these could be attributed to exposure to damp. The symptoms were very slight and could readily be checked by a few baths. Like other authors, we have found that patients with a pronounced neurotic element did not respond to the treatment as well as the others, especially as regards pain. On consideration of our results we are convinced that the transcutan treatment is the most effective remedy in chronic rheumatic disorders we have come across.

We should like to express our thanks to Dr. F. Parkes Weber for permission to include his cases in our publication.

A DECEPTIVE X RAY SHADOW

DUE TO A TUMOUR OF THE SKIN.

BY ROBERT COOKE, M.B. BRIST., F.R.C.S. ENG.,
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IN January last a patient was referred to the out-patient department as a likely case of renal calculus. Examination indicated a traumatic muscular lesion, but a radiogram of the urinary tract was taken. A dark shadow with very sharp margins showed in the renal region on the injured side. It was reported as probably being a renal calculus. Re-examination made me more than ever convinced of the muscular cause of the symptoms, and suspicion fell upon a very soft, pedunculated tumour (the size of a cherry) which had been noticed on the skin of the back in the right loin. The tumour was removed and further skiagrams (both antero-posterior and lateral) showed no shadow. Had there been a renal calculus the shadow would almost certainly have been superimposed on that of a vertebral body in the lateral view.

Unfortunately the little tumour was lost in transit to the pathological department, so that histological section (and subsequent X ray) was not made. It would seem to have been a simple pedunculated lipoma without any palpable trace of calcification.

Similar cases have been recorded before, but this case seemed worth reporting, for it may serve to remind us of the fact that simple skin tumours—with or without any calcification—may cast radiographic shadows which may lead to an error in diagnosis. The factors governing the density of the shadows caused by these tumours seem to be their relative nearness to the film, and the amount of air surrounding them. A short while after this experience, I read of a similar case reported by Delzell. In this instance a simple skin tumour was suspected only after a fruitless search for a stone had been made in a perfectly normal kidney.

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Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY: PROVINCIAL MEETING.

AT a meeting held by invitation in Birmingham on June 4th about 50 Fellows were present.

Afternoon Operating Sessions.

At the Queen's Hospital Prof. W. Billington performed nephropexy, removing the appendix through the same incision, and an interval appendicectomy—both under percain spinal anæsthesia given by Dr. Kirby Thomas. Mr. Bernard J. Ward did a prostatectomy by the open method and a partial cystectomy for growth. He also showed cases in his wards of: (1) simultaneous transplantation of both ureters into the rectum for carcinoma of the bladder; (2) transvesical seminal vesiculectomy for melanotic sarcoma.

At the General Hospital Mr. Seymour Barling did a partial thyroidectomy for second-stage exophthalmic goitre. Mr. H. H. Sampson performed nephrolithotomy. Mr. Percival Mills had intended to do an excision of the colon for carcinoma, but finding the growth too far advanced did ileo-sigmoidostomy. Mr. James Leather performed cholecystectomy in a case where, although no calculi were present, cholecystography showed no filling at the end of 12 and 18 hours. There were adhesions around the gall-bladder.

Clinical and Pathological Session at the Institute.

Cases and specimens were demonstrated at the Medical Institute by the Birmingham surgeons,

followed by a meeting at which Sir HOLBURT WARING, the President, took the chair.—Prof. BILLINGTON, after extending a cordial welcome to the visiting surgeons, showed four cases of Syme's amputation for senile gangrene, the operation having been preceded by *peri-arterial sympathectomy*. For 30 years he had taught the futility of Syme's amputation in such cases, but preliminary sympathectomy had altered his opinion; it cured the pain and the amputation stump was perfectly nourished. Even if a Syme was not indicated in such cases, a much lower amputation was now possible than was previously the case.—The PRESIDENT suggested that, apart from the good results obtained, it was better to amputate about seven inches below the head of the tibia, in view of the greater ease in fitting an artificial limb.

Mr. WARD showed a case in which he had performed a complete cystectomy for bladder growth five years ago; the patient was now in good health.

Mr. SAMPSON showed a case of *œsophagoplasty* in a girl with severe stricture of the œsophagus following caustic soda burns. For some time attempts had been made to dilate with bougies with the result that a perforation of the œsophagus into a bronchus was present when the case came under his care. The operation was performed in several stages; gastrostomy and then a length of jejunum was isolated. A tube of skin was infolded from the presternal area, and the side flaps freed and stitched across; the sex of the patient made this easier, owing to the loose submammary tissue. The œsophagus was then exposed in the neck and the lower end of the upper part transplanted to make junction with the skin tube over the left sternoclavicular joint. A fistula was expected from the free end of the œsophagus, but this had closed firmly. The loop of jejunum was then joined to the lower end of the skin tube, and the other end inserted into the stomach. Mr. Sampson stressed the importance of choosing a loop of jejunum with a good artery in the centre of its mesentery. All scars were now well healed, including the gastrostomy, and the patient was leading a normal working life. He acknowledged his indebtedness for some of his ideas to Professor Zaaij, of Holland, whose case of a porter with a similar condition had come under his notice.

Mr. BARLING, in presenting some cases of bronchiectasis after *phrenic avulsion*, spoke of the increased readiness of physicians to hand such difficult cases to the surgeon. While the benefit of the minor operation only was very marked, he thought that phrenic avulsion should be followed by cauterisation at a latter date.—Mr. BERTRAM LLOYD described and showed the results of cauterisation in similar cases. He laid stress on the low operative risk, and advocated the use of a large soldering iron. He uses the ordinary plumber's type, heated to dull black in an electric oven, which retained the heat for 15 minutes.—Mr. HUNTER agreed that phrenic avulsion in itself greatly improved the condition of the patient. He pointed out that after injection with lipiodol the radiogram in such cases showed two types: one in which the dilatation of the bronchioles was in grape-like formation, and the other which he described as the fingers of a glove, hanging downwards.

Mr. BARON T. ROSE exhibited several cases of *carcinoma of the mouth and tongue, treated with radium*. While the toilet of the mouth was of importance, it should not, he said, be carried too far, as the reaction following wholesale extraction militated against the efficient action of radium. Merely scaling, extraction of one or two really bad stumps with ordinary cleanliness, had proved to be better. Objection had often been expressed to mechanical applicators when interstitial insertion of radium needles was difficult, but he had found them of great assistance to him. He advocated the exhibition of radium around the primary focus before clearing the glands, as a good vascular and lymphatic supply was essential to good local results. It was unnecessary to remove the sternomastoid during the block dissection of the glands.—Mr. PERRIN agreed with the latter statement, a thorough clearance of the anterior triangle being sufficient.

Mr. C. A. RAISON showed a case of extensive *lymphangioma* of the face which had been seen by him for the first time four years ago, when treatment by injections of alcohol, boiling water, iodine, &c., had already been tried, with almost no improvement, and the patient had returned with much extension of the lesion. He had recently treated the upper part of the face with radium, with marked improvement, and intended now to continue using radium with hope of an eventual cure.—The PRESIDENT spoke of the hopelessness of such cases under treatment by excision.

Mr. F. A. R. STAMMERS showed a good result of *lumbar sympathectomy* in a case of thrombophlebitis obliterans with intermittent claudication. He pointed out the advantages of this procedure over arterial sympathectomy, in that the whole of the sympathetic supply to the limb was cut. If a long series of cases was taken, it would be found that the good results of sympathectomy were transitory, frequently lasting only six weeks. The simpler operation, however, was of value in such conditions as ununited fractures, traumatic tuberculous joint, and varicose ulcers.—Mr. PERRIN spoke of several cases of thrombo-angeitis obliterans in which the lesser operation had given much benefit.—Prof. BILLINGTON said that in his case of Syme's amputation after preliminary arterial sympathectomy the amputation was performed two years after the first operation. The stump was healthy and sound, indicating that benefit had lasted much longer than six weeks.

Mr. J. F. BRAILSFORD demonstrated several cases of *lumbosacral deformities*. A case of spondylolisthesis associated with spina bifida led him to suggest that all such cases were of congenital origin, and not traumatic. A condition which he ventured to call chondro-osteodystrophy, in a boy of three years and nine months, was of interest, in that the radiograms showed a condition similar to Perthes's disease in every joint. This was associated with dislocation of the lumbo-sacral vertebræ, large joint spaces, carious teeth, and double inguinal hernia. Daily administration of cod-liver oil, and the use of a posterior spinal support for three years had not improved the condition.

The architect's plans of the new Birmingham Hospital Centre were on view, and excited much interest.

ASTHMA RESEARCH COUNCIL.

SCIENTIFIC MEETING.

A SCIENTIFIC meeting of this council was held on June 5th, the chair being taken by Dr. A. F. HURST.

Prof. R. J. S. MCDOWALL spoke on the

Physiological Aspects of Asthma.

He said that a large amount of what had been written by clinicians was true; they had actually cured asthma in the past. The physiologists had to inquire why the nasal element was important in asthma but was not the only element. General metabolism must be investigated. There was something wrong with protein metabolism in asthma; this might be due to disorders of digestion or of metabolism proper, and these disorders linked on to the psychological aspect of asthma through the phenomena of anaphylaxis. When foreign protein entered the body the autonomic nervous system showed greatly enhanced irritability. The vagus could be set in operation by many mechanisms not yet understood. The eosinophilia of asthma had not yet been fitted into any scheme, but all the various aspects of the problem were being attacked by different workers, and their combined work made a coherent research.

Heredity.

Dr. G. BRAY said that the hereditary factor was the most prominent feature in allergy in two-thirds

of the 200 children he had studied at Great Ormond-street, though the manifestation of the allergy was not always asthma. Sensitivity was found in both parents in 50 per cent. of the cases and on one side in 20 per cent. Of the latter, it was twice as often on the mother's side as the father's. The precipitating factor might depend on environment, mental or endocrine disturbances, alimentary dysfunction, or physical conditions. Males tended to improve and females to get worse towards puberty. The earlier the symptoms of sensitivity appeared the more likely were they to be multiple. Those with history of allergy on both sides had always developed their symptoms before the age of 10. A child born in a family with pure asthma lineage was much more likely to be affected with asthma than other forms of allergy, but even in the same family the symptoms varied.

The CHAIRMAN pointed out the prophylactic importance of the hereditary factor and the frequency with which the early symptoms of asthma were misinterpreted in children. It was curiously rare for any high proportion of children in a family to have hereditary asthma.—Dr. JOHN FREEMAN thought that the hereditary chart depended considerably on the number of intelligent relatives available. With a wider field the figures would be larger. He thought that heredity and determining tissue damage went together.—Dr. JAMES ADAM said that heredity was smothered by nurture. His heredity figure for 1120 patients was 25 per cent.—Dr. BRAY said that 50 per cent. of his patients were "only" children, and most of the others were the eldest of families in which the next child was still a baby. In adults the family history was usually lost.

Types of Asthma and Age of Onset.

Mr. F. COKE spoke of the importance of recognising different types of asthma, which was merely a symptom after all. The differences were fundamental, both for treatment and pathology. Four quite distinct types were: (1) when the asthma directly followed some chest trouble and was usually associated with a patch of congestion at one base; this was usually cleared up by a vaccine; (2) when the trouble started as a dry spasmodic asthma, and the patient was quite well between attacks; (3) a colloido-clasic type, occurring almost always in plump middle-aged women with beautiful skins, paroxysmal rhinitis, and scanty, painful menstruation; (4) an aspirin-sensitive type, with clear-cut symptoms, and invariably associated with nasal polypi.

Dr. L. J. WITTS said that where the constitutional predisposition was very strong there was a tendency to early onset and associated allergic symptoms. In children asthma was a much more general disturbance than in adults, and dyspnœa might not be the most outstanding feature. In adults the paroxysms were shorter, sharper, and more easily provoked, and the patient was never quite well in between. The response to glucose was very good in children under 10, and diminished as years increased.

Dr. HURST remarked that some of the worst cases had polypi; removal made the condition worse, but if the underlying ethmoiditis were dealt with cure usually took place. The belief that cure would follow vaccines or removal from the proximity of the specific protein was optimistic; some substitute condition would usually be developed. It was necessary to treat the central predisposing condition. This was the factor which was attacked by glucose.

Digestion and Asthma.

Dr. BRAY showed graphs illustrating the subnormal secretion of gastric acid and chlorides and delayed emptying in a high proportion of 100 asthmatic children. There was often a good deal of mucus, and bile was completely absent. Twelve of the children had no acid at all, and 45 had less than 10 units; in normal children few or none had no free acid, and of 50 rheumatic convalescents only 20 per cent. had less than 20 units. The deficiency seemed to be an innate quality; it appeared in hay-fever, eczema, and prurigo, but less in hay-fever. Treatment by acid was giving encouraging results, especially in rapid return of appetite and weight. Very young hereditary cases responded better than older ones.

Dr. F. T. HARRINGTON said that much of the mystery and difficulty in asthma were due to not beginning at the beginning; the treatment of dyspepsia in asthma often cured and never did any harm. The layman knew practically nothing of dietetics. The patients should always be allowed to give their own theories; they often provided the key. Very often they related discomfort after food or put the connexion more vividly still. Vomiting would cure an attack and the appetite often failed after an attack. The work of McDonagh on protein particles deserved attention. Allergy could often be reduced if digestion was improved. Inflammation of the nose was a result of digestive disturbance, but some asthmatics had no trace of ethmoiditis. Nasal and bronchial catarrh cleared up under digestive treatment. A distended stomach impeded movement of the diaphragm and thus mechanically produced bronchial spasm. Milk did more harm than any one other factor; no other animal took milk after weaning. It produced a sodden, catarrhal nasal mucosa. Constipation should be treated by rational diet rather than purges.

The CHAIRMAN said that in 24 of 40 adult cases the test-meal had shown normal acid. He hoped it would be possible to make patients secrete their own acid, without having to administer hydrochloric acid. Asthma was very often due to poisons swallowed from defective nose, teeth, or tonsils, and attention to these would cure the paroxysms. The stomach should be washed clear of mucus every morning to restore the mucous membrane.

Dr. E. P. POULTON mentioned another adult case of asthma with normal acid secretion, and one in a child where the acid had been very low at one test-meal and slightly above normal in a second, without any treatment.—Dr. ADAM said that in the majority of his cases there was hypochlorhydria, and ascribed it to defective diet combined with lack of exercise. It was one manifestation of defective ferment action throughout the body due to unsatisfactory hygiene.—Dr. BRAY said he had done repeated test-meals and found no differences.

Dr. JOHN FREEMAN described work associating urticarias and angioneurotic œdemas with infection of the gall-bladder. The cultures were difficult to grow, and the streptococci did not appear in the stools. Sensitive patients had been tested with house dust and with the solid residue resulting from evaporating tap water and dialysing off the concentrated salts. Work on mould spores had had to stop, as the mycologists themselves had not enough knowledge of moulds to help. A series of test-meals had shown that free acid was greatly diminished in sensitive patients. He concluded, from an experiment with the Prausnitz reaction, that the substance which entered the blood through the intestine and was specific for the offending protein was non-dialysable. One good meal discharged the sensitisation artificially induced in a normal subject.

Urinary Proteose.

Dr. G. H. ORIEL described experiments on urinary proteose, which was identical with the albumose long known in the urine of patients with acute infections. It was present in normal urine but increased enormously during an attack of any allergic condition. It was toxic to animals. In doses somewhat smaller than a skin-test dose it benefited some patients; an overdose caused an attack. It probably originated in the gut as a result of faulty digestion. The four methods of treatment were specific, dietary, and the administration of acid and glucose.

Dr. H. W. BARBER spoke on the clinical results of proteose treatment, which must be regarded as specific. It was the only effective treatment for urticaria and

angioneurotic œdema, which responded well; it was strikingly successful in dermatitis herpetiformis. Cases of light sensitisation, being extremely susceptible, were made worse, but some prurigos did very well, and children with Besnier's prurigo did better than adults. Uncomplicated psoriasis was little influenced, but when it was combined with rheumatoid arthritis both conditions were improved. The method was valuable when the offending substance was unknown.

Dr. POULTON said that he had produced a typical rheumatoid arthritis reaction with proteose from a case of that disease in a patient with fibrositis.—Dr. FREEMAN likened proteose to the "histamine-like" substance discovered by Thomas Lewis in cases of dermatographia.—Dr. BARBER answered that the active principle of proteose was an antigen more like Mainwaring's anaphylatoxin, produced by a primary action on the sensitised liver-cell; it was not histamine, though it acted like histamine on plain musculature.—Dr. BRAY mentioned American work, showing the presence of proteose in the gastric mucus; the action was intensified by achlorhydria and delayed by normal or excessive acid.—In answer to a question, Dr. BARBER said that the proteose was probably not identical with the soluble substance produced in infectious conditions.

Sinusitis.

Mr. C. GILL-CAREY distinguished two types of sinusitis in asthma: suppuration limited to one or two sinuses, which responded well to rhinological treatment, and a generalised thickening of the lining membrane, which perhaps should not be called sinusitis at all, as it was probably not due to bacteria originally. The second group were difficult to treat; radical surgery was not justified by the results, but local silver preparations were sometimes helpful.

Dr. BRAY asked whether the condition was the cause or an effect of allergy. The pus was sometimes not neutrophil but eosinophil.—Mr. GILL-CAREY said he regarded it as an effect.

Eosinophilia.

Miss MARJORIE GILLESPIE described research into the variations in the eosinophil count. In asthma patients it hardly ever dropped below 4 per cent., and the highest recorded was 57 per cent. in a man who was having no attacks. The average was between 7 and 10 per cent. During the attack the percentage fell to one-half. It rose considerably during the menstrual period and in pyrexia. Detoxication caused no variation. Adrenalin reduced the count; urea raised it and caused acute symptoms; large doses of sodium bicarbonate did not alter it. It bore no relationship to the alkali reserve; it rose with the blood amino-acid content, but not relatively.

Dr. BRAY criticised the percentage count as being misleading; the total number was lower than normal in attacks but the percentage might rise because of the general shortage of lymphocytes in the attacks. In normal children the percentage was 2 of 10,000; in asthmatics it was 3, but of 15,000 or 18,000.

Dr. F. A. KNOTT described the examination of sputum plugs for eosinophil cells. A large number contained no bacteria, and when organisms were present they were generally Gram-negative. Eosinophilia in the sputum pointed definitely to eosinophilia in the blood. His figures agreed with Dr. Gillespie's. About a half of the cultures produced a wheal in a non-sensitive person and contained histamine, the production of which locally by a specific small-tube infection might be one slight cause of the asthmatic state. Over half the specimens of fæces showed undigested residues of some kind. They mostly came from small children of the achyliac type described by Dr. Bray, and tended to contain late-lactose-fermenting bacilli, supposed to be proteolytic but giving no skin reaction.—Dr. HURST remarked that the treatment in these cases should be dietetic; desensitisation was useless.

Dr. HARRINGTON outlined treatment by diastolisation, and described and showed the inflatable rubber bougies in use and the apparatus by which ease in breathing was tested.

Dr. HURST asked his opinion on lavage with carbon dioxide, which could be bought in small cylinders and had given good results in his own nasal catarrh; Dr. Harrington agreed that it was a useful palliative.

At the meeting of the Medical Advisory Committee it was decided to form an asthma research club for free private discussion of problems and results. Dr. Freeman consented to act as secretary.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE quarterly meeting was held at the house of the British Medical Association on May 22nd, Dr. NATHAN RAW, the President, being in the chair.

PSYCHIATRY IN AMERICA.

A discussion on American psychiatry and any practical bearing it might have in the application of recent local government and mental treatment legislation was opened by Dr. A. A. W. PETRIE (Banstead), who gave an account of a recent visit to American general and mental hospitals, psychiatric clinics, reception units, observation wards, and mental deficiency institutions, as well as mental hygiene centres and various forms of child guidance organisations and the associated nursery schools. Observations were also made of psychiatric work in connexion with juvenile courts. Dr. Petrie had visited Montreal, Toronto, Chicago and vicinity, Boston, Worcester, Wrentham, Washington, Baltimore, Philadelphia, Yale University, and New York City and State. Each State had its own method of dealing with the problems involved.

In the progressive Eastern States it was usual, he said, for the mental hospital service to be a subsection of the State welfare services under a medical commissioner. Concentration of executive authority in the State rendered progressive development easier, and it was more possible to obtain legislative and other changes. In New York and New England well organised State social services were being developed. The larger unit provided by the State allowed in America a coördination of activities not possible in smaller units. New York State, for instance, dealt with over 63,000 patients who are drawn from a population of 44,000,000. The recent Local Government Amendment Act, however, did make one authority in an administrative area responsible for the treatment of the earliest stages of mental disorder, and therefore it was hoped that well coördinated and efficient reception hospitals would take the place of the present wasteful division into observation wards of doubtful efficiency. He expressed the further hope that the Mental Treatment Bill, when it became law, would allow of the development of voluntary clinics on the same lines as in the Maudsley Hospital and the famous Phipps Clinic in Baltimore. The latter was greatly under the dominating personality of Dr. Adolph Meyer. It consisted of 60 beds and an out-patient department, and education and research were prominent features. Notable also was the clinic at Philadelphia, a hospital somewhat resembling Bethlem in London. It had decided to take a place in the country for certified cases of longer duration, and leave in the city a clinic for out-patients. The psychiatric institute which had been established in New York in connexion with the medical unit of the Columbia University would be one of the most notable in the world. Reception hospitals were increasing in number, which was one of the most hopeful signs in the United States.

Dr. Petrie doubted whether such clinics and reception hospitals should be an actual part of the

hospital to which they were attached. The out-patient department at the Boston Psychopathic Hospital, which was the clearing-house for Boston area, attracted as many patients as the corresponding out-patient department at Boston General Hospital. In the event of noisy patients having to be taken, double windows were provided. The work of these reception units was largely determined by the source of the admissions. In the Chicago Clinic, with its 175 beds, about 100 beds had to be cleared weekly in order to deal with the probable new admissions. Dr. Petrie usually found that these units had not sufficient staffs to deal with the great amount of material passed through them. A unit with 600 beds was being projected in New York. The chronic patients in the large State hospital in America were not any better dealt with, in Dr. Petrie's opinion, than this class were in England, and in the former country overcrowding prevailed at many places. Much difference of opinion existed in America as to what was the best size of mental hospital. In Massachusetts, a very progressive State, 2000 patients was the usual limit. He found in the States a similar tendency to that in England to modernise old hospitals by building new and up-to-date units for the newer mental patients, and infirmary blocks or hospitals for those suffering from physical diseases. He also saw in America good examples of the villa or colony hospitals.

The consultant medical staff of American State Hospitals were, said Dr. Petrie, usually appointed on a liberal scale. In the progressive States the house medical staff was in larger proportion to the patients than in England; in Massachusetts there was one assistant physician to each 150 patients. And a most useful appointment which was common in the States was that of clinical director or clinical psychiatrist, who was placed equal in rank with the deputy medical superintendent and the pathologist. He directed and coördinated treatment, and was usually a teacher in a medical school. The laboratory facilities were similar to those in England, but one frequently saw a more elaborate equipment. A further aspect was that lectures to psychological and theological students and social workers in general were encouraged in the States. Much could be done in this way to break down the prejudice and mystery which were generally associated with mental hospital work. A sharp division existed between nurses and attendants, based upon the preliminary education required. Attendants had no special training. The line of cleavage would become more marked in the future when a complete secondary education for the nurses was demanded.

Occupational therapy, Dr. Petrie considered, was more broadly developed in the States than in this country. At St. Elizabeth's, Washington, for 4000 patients, 16 occupational therapy officers were engaged. The hospital farms tended to be larger than here. Canning of meat was commonly seen. Hydrotherapeutics was well organised, and hot baths and packs were usually employed, sometimes under conditions which in this country would be termed "restraint." Electrical treatment plant installations were generally of a high standard. Diathermy and other high-frequency apparatus was frequently seen and often used to induce high temperature in the treatment of general paralysis. Ultra-violet and infra-red light rays were in general use, and it was common to see automatic recording apparatus in connexion with bath treatment and blood pressure.

Out-patient departments for mental cases were usually run in connexion with the State hospitals. This certainly kept the medical staff in touch with the early phases of the disease. It was considered an advantage that the granting of trial or discharge should be vested in the medical superintendent, such decision being assisted by staff conferences at which the patients were examined. The terms of commitment, he said, varied in the different States, but, on the whole, were not very different from those obtaining in England. Temporary observation was permitted for from 10 to 30 days. Several States permitted voluntary admissions, but owing to the overcrowded condition of the mental hospitals few were received on this basis in the State hospitals. The cafeteria (self-service) system (which he described in some detail) was worth consideration, as there was a minimum of waste from it. Still, he did not think that even the advantages of the system would justify the cost of initiating it in this country. An interesting development was the wide establishment of beauty parlours and hairdressers' shops in State hospitals. They did not cost a great deal and did much to improve the appearance and increase the self-respect of the patients. Another pleasing feature was the combined canteen and club rooms which were provided for the patients on parole. The cost per patient per week in the States averaged about 35*s*. In Canada it was rather less, in New York a little higher.

Dr. Petrie was favourably impressed with the mental defective "schools" which he inspected at Wrentham and Letchworth. To a great extent the institutions trained their own people as there were not many trained teachers available for the work. Child guidance, nursery schools, and parent guidance were comparatively new features, and all these agencies had a psychiatrist who acted as director. Sometimes a children's physician, a social worker, and one who specialised in recreation were added.

This work had been started in association with juvenile delinquency. The mental hygiene movement had done much to stir and educate public opinion in the States, and one reason progress was being made was that the professions and laity in the States were being educated to take a more reasonable attitude towards mental illness.

Dr. J. R. LORD (Horton) said his visit to the States to attend the World's Mental Hygiene Congress was a short but intensive one. He had been enlightened on many subjects and disillusioned on a number of others. The medical profession in America was not, he said, anything like as unanimous on the value of sterilisation as was thought. The layman, however, had taken up the subject keenly. An important discussion took place at the Congress on the organisation of the mental hospital in the mental hygiene service. Dr. Lord expressed his own view that if care were not taken there was a danger that psychiatry might again become a closed system, and revert to a position of isolation. There should rather be a psychiatrisation of all medical and social services, leaving to psychiatry the care and treatment of actual mental disorders from their earliest stages. The magnitude of the problem of the mentally afflicted in the United States was much greater than in England. The rate per 100,000 of the general population in America for first admissions to mental institutions of all kinds was 76·0; in England and Wales it was 45·4. In America 277·7 per 100,000 of the population were in mental institutions; in this country 290·6. To the American figure for comparative purposes must be added 24·0 for parole cases, giving a total figure for that country of 301·4. But this was not the whole story. American State institutions were for the most part shockingly overcrowded, even up to 50 per cent. of their accommodation.

State control of mental institutions had been commented upon favourably, but Dr. Lord could not help thinking that such a state of affairs would not have been tolerated if the responsibility for providing the accommodation had lain with local authorities. He had always laid it down that the more closely local people were identified with the care and treatment of their mentally afflicted and defective, the sooner ignorance and prejudice regarding them would be dispersed and the need for judicial intervention reduced to minimum requirements. It was for the State to lay down great principles and advise how they should be carried out, reserving to itself a veto when such principles were disregarded. One

thing appeared to him to be certain, and it was that America had no intention of solving its psychiatric problems by bricks and mortar alone. Child guidance and welfare work of all kinds organised for the prevention and early treatment of mental disorders; eugenic measures and parental education were to have the drive of the State dollars for the future—hence the reluctance to increase the State hospital accommodation. America had also lessons for us in the importance it attached to the psychiatric education of medical men, social workers, occupational therapists, and others in the field of public welfare. Research work, too, was more widely developed and received greater support and encouragement both from the State and private citizens than in this country.

Touching on legal matters, Dr. Lord said that as regards the mental services (and certainly not if the Mental Treatment Bill became law) America had little or nothing to teach us except perhaps in respect of recent enactments in one or two of the more progressive States, and also in the way in which patients are allowed out on leave or discharged. Although many State hospitals and municipal clinics could admit voluntary patients (the state of mind qualifying for such seemed to him almost to exclude any aberration) this departure did not receive much encouragement from the hospital authorities judging by conversations he had had with many superintendents from all over the States. The modern practice was admission on two medical certificates sworn before a judge or magistrate. This is thought to be the wisest course in non-litigious cases, to avoid future complications. In some of the States patients, litigious or not, could be detained for from 5 to 30 days on two medical certificates, unsworn or, if a court order was required and did not accompany the patient, on notification, the judge or magistrate issued a temporary commitment order and fixed a date for the "hearing." If the patient or his friends demanded it they could be present at a "hearing"; if no such demand were made the judge confirmed the order. The "hearing" might be within 5 to 30 days if, in the meantime, the patient had not been discharged or been classified as a voluntary patient. Such court orders were always necessary in litigious cases after 5–30 days, but not always before this time. Objectionable forms of judicial intervention still existed, but America did not seem to mind. A period of temporary treatment for 12 months without any judicial intervention as proposed under our Mental Treatment Bill was, generally speaking, unthinkable in America. Only in Maryland had the law on commitments been much relaxed. As in England it was the hospital in America comparable with our registered hospital which received a majority of voluntary admissions. He hoped that our experience under the Mental Treatment Bill would not, as regards voluntary admissions to public hospitals, be the same as in America. He felt sure it would not if Clauses I.–IV. were properly administered by the local authorities.

Other speakers followed, mainly seeking explanations or further information.

A RADIOLOGICAL INSTALLATION.—At the quarterly court of governors of the London Hospital last week, Lord Knutsford reported that about £5000 is being spent upon the installation of new apparatus for radiography and for treatment by rays of very short wavelength.

HULL ROYAL INFIRMARY.—The work of this institution last year constituted a record. There were 4227 in-patients, 15,801 out-patients, and 23,938 casualties—a total of 15,000 more than were treated as recently as 1919. The average in-patient stay was 20·66 days, compared with 22·04 in 1928. The annexe at Sutton is expected to be completed before the end of the year.

Reviews and Notices of Books.

DISEASES OF THE SKIN.

Treatment in Detail. By NOXON TOOMEY, M.D., late Instructor in Dermatology, University of St. Louis. St. Louis, U.S.A.: Lister Medical Press. 1930. Pp. 512. $7.50.

THIS is the third volume of a series of which Pathology and Diagnosis form the other sections. It will doubtless make a wide appeal, for in the treatment of diseases of the skin there is more divergence of method and less tendency towards standardisation than in any other branch of medicine. The experienced dermatologist will approve the classification and general plan of the book, the casual reader its simple, almost colloquial style. There are no tiresome introductory sections on the theoretical principles concerned either with internal medication or local applications. These are adequately discussed under the various diseases where necessary, and the author proceeds directly to his purpose from his first section which is on eczema. The briefest study of this section makes it apparent that the author is a master of technique in therapy, and has personally supervised every detail of the measures advocated under the various headings. As he himself remarks, "there is no cutaneous disease in which therapeutic skill is better brought out than in eczema." All the formulæ given are easily memorised and have the support of years of universal experience behind them. The author wisely abstains from offering too many alternatives. He names no sources of information, and in this respect, too, he is wise, for it is obviously gathered directly or indirectly from the records of all nations. A word of caution seems necessary. The book is not an elementary treatise on the therapeutics of skin diseases, and can only be used with advantage when a wide experience in diagnosis and pathology has been gained. With so much that is modern and universally accepted, it is disturbing to find that the author still advocates the use of X rays in certain stages of the treatment of lupus vulgaris; the appalling sequelæ which many dermatologists in this country and abroad are frequently called upon to treat have led to an almost complete abandonment of radiotherapy for lupus in expert European circles, where reliance is placed upon actinic and certain caustic applications. The treatment of dermatitis repens, which has been known in this country since the days of Radcliffe Crocker, is considered in a new and interesting light, and the method advocated seems applicable to other dermatoses of a chronic and resistant character. There is a good index, and the paper and printing are of excellent quality.

The book is likely to find its way into all dermatological libraries both public and private. It makes good reading, and is compact with stimulating information.

MODERN SUNLIGHT.

By LEONARD V. DODDS. London: John Murray. 1930. Pp. 322. 7*s.* 6*d.*

AS Sir Oliver Lodge states in his preface, this book deals fully with medical opinions on the subject, and is put together in simple and readable form. Technicalities are avoided since the book is written for the general reader, but, on the whole, the information offered is remarkably accurate. There are a few statements which the medical reader will criticise. For example, we doubt whether the earlier detection of a scarlet fever rash by the use of daylight lamps in fever hospitals would be a valuable asset in saving life, but it might certainly play a part in limiting spread of infection. It is unfortunate that in a book meant for the lay reader the impression should be given that helio- and actino-therapy have rendered any form of surgical interference unnecessary in surgical tuberculosis. The book is of interest in the support

it gives to the value of actinotherapy, which has been seriously questioned or alternatively attributed to psychological effects. Abstracts of recent veterinary work show that breeders and trainers give light treatment regularly to both horses and greyhounds, and the opinion is expressed that such treatment has introduced a new factor in the calculation of racing-odds. The experience is quoted of workers at the Rowett Research Institute, who found that irradiation of cows increases the period of maximum yield and safeguards the health of the animals. The director of the institute of cattle-breeding of Königsberg reports that farmers are recommended to procure quartz lamps to prevent the occurrence of rickets in cows and valuable breeding bulls. Bees are the latest recruits to ultra-violet light treatment. We are informed that the hive hums contentedly, comes out as if the sun were shining, and manifests its well-being by building more cells and hatching the larvæ in shorter time. Among the less reputable uses to which ultra-violet light has been put is, we are told, the "making of antiques" by darkening and bleaching modern furniture and the making of "vintage" wines. This small manual will attract both medical and lay readers, for it contains interesting information and is written in a pleasant unassuming style.

L'ANÆSTHÉSIE LOCALE EN OTO-RHINO-LARYNGOLOGIE.

Par G. CANUYT, Professeur de clinique d'oto-rhino-laryngologie; et J. JOUBLOT, Chef de clinique, à la Faculté de Médecine de Strasbourg. Paris: Masson et Cie. 1930. Pp. 231. Fr.40.

Prof. Canuyt, who is well known for his work on local anæsthesia, has given us here, in collaboration with Dr. Joublot, a straightforward account of his methods in the department of oto-rhino-laryngology. Their technique is simple; the only solutions employed are 5 per cent. cocaine for surface application to mucous membranes, and 1 per cent. novocain with 0·2 per cent. of potassium sulphate as a synergist both for infiltration and nerve-blocking by injection; one drop of 1 in 1000 adrenalin is added to each c.cm. of either solution just before use. The authors deny that the use of adrenalin is followed by vaso-dilatation; on the contrary, they maintain that it favours coagulation and hæmostasis. Synthetic preparations of adrenalin are not mentioned, and the experimental proof of the advantages of ephedrine is not held to be complete enough to warrant its substitution over adrenalin. Of cocaine substitutes, butyn, or butelline as it is called in France, was found satisfactory for surface application, but is not recommended for injection; for this purpose novocain is exclusively employed. The authors state that the anæsthetic power of novocain is insufficient for the method of imbibition, or surface application; but in a later chapter, on the subject of removal of adenoids in children, they say that they are accustomed simply to paint the nasopharynx with a weak solution of novocain because "this local anæsthesia is safer than a general anæsthetic and satisfies the parents who thus know that their child will be operated on without pain." The confidence of parents in this respect does not seem justified by the facts. General anæsthesia is condemned for the removal of adenoids because of the danger of death from a general anæsthetic of any kind; similarly for tonsillectomy, general anæsthesia is said to be contra-indicated in all circumstances as being dangerous and predisposing to hæmorrhage and, especially, to broncho-pulmonary complications.

In this country, where general anæsthetics are largely given by men who have specialised in the subject, and where our students are instructed in administration by such specialists, few laryngologists will support so sweeping a statement, which takes no account of the injury inflicted on the nervous system of a sensitive child. In aural surgery the authors are less opposed to general anæsthesia, which they recommend for the mastoid operation unless contraindicated by the condition of the patient. For the radical mastoid operation, it has hitherto been difficult to secure adequate local anæsthesia of the tympanic cavity; this the authors secure by direct application of Bonain's liquid, which, however, is not likely to be successful unless there is a large perforation of the membrane. Local anæsthesia is advised for laryngectomy, but Prof. Canuyt, rather surprisingly, prefers laryngostomy to this operation for the treatment of cancer. The greater part of the book is taken up by careful and minute directions for the production of anæsthesia for every kind of intervention in the nose, throat, and ear, including the lower jaw but excluding dentistry. These directions are practical and simple, well illustrated by diagrams, and as here drawn together, constitute a useful book of reference for all workers in these regions.

TEXT-BOOK OF PATHOLOGY.

Second edition. By D. N. BANERJEE, M.D., Demonstrator of Pathology, Carmichael Medical College. Calcutta: Medical Bureau. 1929. With 305 illustrations and 9 coloured plates. Pp. 646. Rs.12.

JUDGING by the prevailing standard of European pathology, one would be bound to say that this is a bad book. It teaches practically nothing of general principles and is by no means free from inaccuracies of commission and omission. It includes bacteriology, animal parasitology, laboratory methods and laboratory diagnosis, and starts from cases in the wards rather than from bodies in the post-mortem room. It would be plainly absurd to concentrate the teaching of pathology in India round the same topics as are used in England; to give it any reality to medical students pathology must deal as far as is possible with the diseases which happen to be common. And looking at Dr. Banerjee's book from this point of view and considering the conditions under which it is intended to be used, we can imagine that it will continue to serve a very useful purpose. It is remarkably cheap.

THE PROGRESS OF LIFE.

By A. MEEK, D.Sc., Professor of Zoology in the University of Durham. London: Edward Arnold and Co. 1930. Pp. 193. 10*s.* 6*d.*

LIKE many biologists who spend a good deal of their time in actual contact with live animals in their natural haunts, Prof. Meek is altogether unsatisfied with natural selection and Mendelian heredity as adequate explanations of the world about him. He cannot get away from the conviction that the environment impresses itself on the organism which reacts to it and that such changes are or may be inherited. It is indeed a little difficult to see why anyone should want to get away from such a point of view except out of respect for convention. Prof. Meek's interpretation is Lamarckism with the addition of the "memory" conception urged by Cope, Samuel Butler, and Semon; hence he calls it "psychogenetic evolution." Equally he condemns all theories of particulate inheritance, especially the modern doctrine in which the gene is all-important. Here he is perhaps rather too sweeping. It may be that there are many mechanisms of inheritance, and that the same end is achieved by a variety of routes, the organism being relatively indifferent which it takes. Reproduction among the higher animals is usually sexual but parthenogenesis and budding and splitting of eggs also occur; the fact of reproduction is evidently controlled by the end which is attained, not by the mechanism which happens to be used. And so, too, perhaps it is by various means that the product of reproduction resembles its parents.

SLOUGH MATERNITY HOME.—Viscountess Astor, M.P., recently laid the foundation-stone of a maternity home which is being erected at Slough by public subscription. It is the first institution of the kind in Buckinghamshire.

THE LANCET.

LONDON: SATURDAY, JUNE 14, 1930.

THE SIMON COMMISSION AND MEDICAL SERVICE.[1]

THE first volume of the Report of the Indian Statutory Commission, the Simon Report, which appears this week, deals lucidly with many, if not all, the problems with which Great Britain is faced in attempting to reach the goal of British Indian policy for the future, which was laid down by the Montagu-Chelmsford Report in 1917. That policy increasingly associates Indians with every branch of the administration, and is designed to develop self-governing institutions, with a view to the progressive realisation of responsible government in India, while the country remains an integral part of the Commonwealth. It is at once apparent that the Simon Report must deal with vast interests and that controversy will be inevitable, however studiously fair the recommendations may be; and for this reason the document is being issued in two volumes at an interval of a fortnight, the Commissioners hoping that the general survey, which constitutes the first part, will be mastered before the recommendations in the second part are criticised. This way of approaching the public seems entirely reasonable, for although all political parties are recognised in the personnel of the Commission, feelings far deeper than those usually labelled political are engaged in the question of the British sphere in India.

In the survey of the administrative departments, as they function in the Indian Empire, the Indian Medical Service receives just and sympathetic notice. It is pointed out that, while the Service was primarily a military one, so that all the officers are required to serve for some years as officers in the Indian Army, still a process of transference to civil administration had been for many years in operation whereby their normal appointments could become those of the civil surgeons of a district; so that the Indian Medical Service has a double rôle to play. As is well known, since the Lee Commission the number of officers employed has been limited to those required, first, to supply a medical reserve for the Army, and secondly, to ensure the treatment of Europeans by European medical men. The new policy in relation to self-government must, moreover, limit the powers of the civil surgeon, European or otherwise, for medical administration. Here we find some, at least, of the reasons for the difficulty which the Indian Medical Service has had in the recent past in obtaining a full cadre of officers; but here, also, we may discern a prospect that this difficulty will not be permanent—even if it is not beginning to disappear. In the last available report issued by the Health Commissioner with the Government of India there is a passage, written three years ago,[2] which bears directly upon this situation, and inspires the optimistic view. "From the early days of British rule in India," says the Commissioner, "the importance of public health was realised, but the policy of Government was based on the view that it was necessary, first of all, to educate the people and to secure their goodwill towards public health measures. For this reason attention was first concentrated chiefly on medical relief." In other words, it was evident that, while the benefits of treatment are obvious, those of preventive medicine may go unappreciated, because their influence is not immediate or because, when manifest, it is misunderstood. Now preventive medicine must be based upon central administration, and this is the position which is now being reached in India. Under central administration real coöperation between the British and the Indian man of science will appear, and the immense field for scientific work which the problems of epidemic disease present in India will attract the right people for their elucidation.

[1] Report of the Indian Statutory Commission. Vol. I. Survey. H.M. Stationery Office. 2s.

[2] The Medical Officer, June 7th, p. 251.

NERVOUS SEMIOLOGY IN EPILEPSY.

THE progress of medicine has admittedly been achieved by a process of step by step evolution. Hence the necessity for an occasional broad survey of the existing state of knowledge. Recent observations require to be evaluated and correlated with known facts and current conceptions. And it is eminently desirable that those who have given special attention to particular problems should indicate from time to time the admitted direction of the stream of contemporary thought. Dr. KINNIER WILSON, in the Morison Lectures delivered before the Royal College of Physicians of Edinburgh early this month, chose as his theme Nervous Semiology with Special Reference to Epilepsy. His philosophic treatment of certain general considerations, to the importance of which he has become increasingly attached, was of great interest. A differentiation of nervous diseases according to a purely clinical arrangement obviously has limitations, for the same symptom or group of symptoms can arise in conjunction with lesions at different physiological levels and as a result of different pathogenic actions. Again, the clinico-anatomical method, while it has led to discoveries and advances of the first importance, has too its limitations. Hence ætiology must be regarded as the sole basis for the scientific arrangement of nervous disease. But investigation may often lag behind surmise. We shall find insuperable difficulties in establishing disease entities unless we can prove that a given causative agent produces invariably and solely the same reaction in the body exhibiting the same syndromes and amenable to the same treatment. A pathogenic agent can be regarded physiologically as a stimulus, and physiology recognises only three classes of stimuli—pure excitants, pure depressants, and those which first excite and then depress. Clinical symptoms are to be considered as representing either excitation or cessation of function, or a series in which the latter follows the former. Again, all symptoms are functional in the sense of being related to function; only when a sign is residual and static can it be regarded as organic. According to the nomenclature of HUGHLINGS JACKSON all symptoms are either positive or negative. Again a positive symptom, as exemplified by various forms of involuntary movement and pain, is an indication of the action of a functioning mechanism. Further, the localisation of a symptom, a functional system and a lesion is, in each instance, a different and separate thing. No specificity attaches in a general way to nervous symptoms, and the same may be said of

pathological changes; NISSL soon gave up the view that specific poisons produce specific cell alterations. The general conception of the essential non-specificity of neural tissue reactions, whether mesenchymatous or parenchymatous, is, in Dr. WILSON'S opinion, unassailable. A "disease process" calls forth vital efforts to cope with noxæ, and while many symptoms are proof of health, many lesions are evidence of attempts at repair. Along such lines of thought Dr. WILSON believes we shall gain a truer insight into the activities of the nervous system.

A large part of neural semiology is indicative of increase of neural function, but some varieties of epileptic seizure are considerably more inhibitory or akinetic than kinetic or excitatory. FOERSTER has suggested the possibility of sensory inhibition through hypothetical efferent fibres in relation to the symptom of pain. Impressions from the periphery in numerous instances never penetrate to the cortical level, since they are damped down or shut off at lower levels, and it may be justifiably assumed that there is some form of protection in respect of cortical action. Dr. WILSON utilises in modified form HUGHLINGS JACKSON'S conception of three levels of the nervous system. The highest level corresponds to the whole cortex outside and above the anatomical projection centres; this projection constitutes the middle level; while the lowest is taken to include what may probably be regarded as the older system—viz., basal ganglia, brain stem, cerebellum, and spinal cord. A theoretical division of fits into those of the highest, middle, and lowest level is conceivable. While every fit preceded by a definite aura must be a highest level fit in so far as that symptom is concerned, the aura is merely the prelude of the fit and not its cause. Thus fits of lowest level type, if an aura is present at all, must somehow be able at the outset to influence the cortex, assuming that to be the seat of commencement. Dr. WILSON is of opinion that there is no differentiation between the aura of hysterical fits and of organic epileptic seizures. "It is surely proper to consider hysterical seizures as highest level fits par excellence." Thus, among the symptoms referable to excitation or transcortical release on the highest physiological level are (1) an aura in consciousness; (2) types of movement coördinated and quasi-purposive, occurring either in association with convulsive movements or by themselves; and (3) post-convulsion movements and actions of the same high level class. Acute and post-epileptic phenomena form indeed an integral part of the whole. The term epileptiform convulsion should be confined rigorously to Jacksonian epilepsy —i.e., fits of the middle physiological level. When we speak of the involuntary movements of Jacksonian epilepsy we can mean little else than that they cannot be transcortically prevented. The defective inhibition may conceivably be represented by change at some wide region or in some cellular layer remote from the spot where the arcs are in action. Reflex epilepsy is an expression which has never been defined with any precision. Two cases were referred to in some detail by Dr. WILSON as demonstrating the occurrence of pure reflex response to extrinsic stimuli through areas whose nodal point is certainly situated in the cortical grey matter. The motor area of the neurophysiologist is nothing more nor less than a motor or sensorimotor ganglion pushed up into the neopallium. Prominent authorities take the view that consciousness exists on different physiological planes. Can the motor phenomena of an epileptic seizure be produced at other (lower) levels than the cortical? In the decerebrate animal absinthe will produce attacks. The distinction, sometimes still advanced by the clinico-anatomist, that the clonic element in fits is of cortical origin, the tonic of infracortical origin, cannot be upheld in its entirety, for both tonic and clonic convulsions have been produced by PIKE and ELSBERG in animals deprived bilaterally of the cortical motor areas, although it is true that DANLY claims to have proved that in the dog the cortex is required for the clonic component. A fit is difficult to define. "The clinician may claim any temporary, disorderly, paroxysmal, recurrent, uncontrolled manifestations of either motor or sensory processes as in essence a fit," and this on any physiological plane.

The term striatal epilepsy was first employed by AUGUST WIMMER, in 1925, for attacks of tonic spasm which he believed might have a striatal basis. SPILLER, in 1927, described two similar cases of brief tonic spasm under the designation "subcortical epilepsy." These spasms were brought on by voluntary movement of the limbs concerned, and the contractions were painful. Again, STERLING has suggested the term "extrapyramidal epilepsy" for cases of spastic contractions in the course of post-encephalitis, or during a more acute period, distinguished by painful spasms of fingers, toes, limbs or segments of limbs, and inclusive of facial or torticollic movement. Dr. WILSON holds, however, that the association of tonic spasm or painful spasmodic contractions with destructive lesions of the corpus striatum must be examined under very considerable reserve. Tonic spasms, being release or excitatory symptoms, cannot result from outfall of striatal cells, and the actual mechanism involved must have occupied an extra-striatal position. General tonic seizures were described by HUGHLINGS JACKSON as cerebellar fits, and Dr. WILSON has described a number of cases of the kind in his paper upon Decerebrate Rigidity in Man and the Occurrence of Tonic Fits. These attacks are found in association with a variety of conditions. The assumption of tonic attitudes and the appearance of tonic contractions are most likely to develop when the lesion dissociates physiologically the cerebral hemispheres from cerebello-mesencephalo-pontine levels, and where, therefore, striatal function also is in complete abeyance. Referring to tonic fits, Dr. WILSON remarks, with graphic humour, that "hysterical fits in the grand manner are out of fashion." One type of fit, however, occurs which has intimate affinities from the standpoint of form with what obtains in fully developed tonic fits attended by physiological decerebration. The physiology of hysteria is one of many matters in neurology which call for serious research. Certain lowest level fits are characterised by symptoms in which affective or viscero-motor phenomena predominate. It is permissible to speak in general terms of "periventricular epilepsy," by which may be designated cases remarkable for localisation of the disorder in neurosympathetic centres, at least in major degree to the exclusion (absolute or relative) of sensorimotor phenomena of somatic type. It is difficult to ascertain whether peripheral or cortical cells form the starting-point. We must postulate an open way between the focus and the percipient cortex, since in few of the seizures is consciousness ever lost. The victim is aware, only too acutely, of some violent disorder referred to his viscera, but is incapable of inhibiting it. Prominent among these lowest level fits are the "vaso-vagal attacks" of GOWERS, "pseudo-angina" and "nerve storms." The patient complains of attacks of palpitation of the heart, difficulty in breathing, a suffocating

sensation in the throat, hot flushes, coldness, sweating, shivering and trembling, nausea and other epigastric sensations, and often also an indescribably distressing feeling of impending trouble, of fear, even of imminent dissolution. Another type of case is characterised by continual yawning with constant voiding of urine, followed by violent giddiness, headache, and occasional vomiting. Dr. WILSON concluded his learned disquisition thus: "If we could but discover the secret of inhibition and of de-inhibition, if we had some scientific means of reinforcing the former at the moment when escape from control is imminent, could we but determine that switching off of the current which in some patients can be effected by potent stimuli aroused through other channels at the crucial moment, our treatment of epileptic episodes would not be so nugatory as it often proves to be."

By this running summary of Dr. WILSON'S Morison Lectures our readers should be stimulated to read the full text when it appears in the *Edinburgh Medical Journal*.

CARDIAC PAIN.

PAIN is the commonest symptom which leads patients to seek medical advice; it is the greatest safeguard we possess against the risks of undetected mischief with the inevitable consequences. When the pain is located in the chest, it is often suspected, rightly or wrongly, of being of cardiac origin. In the most serious type of cardiac pain—namely, angina pectoris—there is often little objective evidence of heart disease. The diagnosis then rests solely on the subjective symptoms, in fact on the patient's description of the paroxysms, for it is rarely that the doctor himself has the opportunity of witnessing an attack. The importance, therefore, of being able to differentiate this from other types of præcordial pain is obvious.

The outstanding feature on which the diagnosis of angina is based is its association with exertion or emotion. It is typically brought on by physical exertion or relieved by rest. The pain itself limits exertion and brings the patient to a standstill, just as dyspnœa limits exertion in the congestive type of heart failure. It has, however, long been recognised by clinicians that in some cases the pain is not relieved by rest, and may arise in the absence of any apparent exciting cause. Most of these cases are examples of coronary occlusion with myocardial infarction, and can be recognised by the associated symptoms of that syndrome. There still remains, however, a third group of cases in which præcordial pain is the patient's chief complaint, but in which that pain is not attributable to any organic heart lesion, and is not of serious significance. This type of pain used to be spoken of as false angina—a term which has rightly fallen into disrepute—for the name angina, however qualified, is associated in the lay mind with sudden death, and the patient who is branded with it lives in continual dread of a most painful and fatal malady. The benign type of præcordial pain is much commoner in women than in men, and often appears at the time of menopause. It generally differs from true angina in affecting the chest wall in the vicinity of the cardiac impulse, though not uncommonly it may radiate through to the back and involve the left arm. Its nature and diagnosis are fully discussed by Dr. DORIS BAKER in our present issue.

Dr. BAKER followed up the after-histories of a series of patients who have come to the National Heart Hospital complaining of left inframammary pain. As she points out, the pain is generally only one—though the principal one—of a large and varied group of symptoms. Its most common associates are undue fatigue, nervousness, faintness, palpitation, and certain peculiar disorders of respiration. The very multiplicity of these symptoms serves to clinch the diagnosis. They are all attributable to a common cause—namely, nervous exhaustion—and though they may prove very intractable to treatment, their prognostic significance is relatively trivial. In all types of pain, wherever situated, there are two factors to be considered—the lesion causing the pain and the sensitivity of the perceptive nervous mechanism of the patient. LIBMAN has called attention to the importance of hyper- and hyposensitivity in patients suffering from angina pectoris, the prognosis being much more favourable in the former group. This can readily be understood by the analogy of the pain of gastric ulcer. The hypersensitive subject seeks medical advice at an early stage when the ulcer is amenable to medical treatment. The hyposensitive patient, on the other hand, may suffer little inconvenience until the ulcer either erodes a large blood-vessel, causing profuse hæmatemesis, or else eats its way right through the coats of the stomach and the case comes to the surgeon as a perforation. In the type of præcordial pain to which Dr. BAKER refers it is the hypersensitive nervous mechanism which is the important factor, and treatment with sedative drugs is the line which should be adopted. As the after-history of these cases shows, though the pain may persist with remissions from time to time, the ultimate prognosis is extremely good.

THE STAPHYLOCOCCAL INFECTIONS.

THE study of staphylococcal infections from many points of view takes up more than half of the Guy's Hospital Reports for April, 1930. Invasion by staphylococci can take such varied forms, from the simple pustule to severe septicæmia, that it is difficult to regard it as a single entity; but the symposium, which opens with a survey of staphylococcal fever by Dr. J. A. RYLE, shows that its manifestations must not be dismissed as isolated phenomena, but always considered as potential general infections. Diffuse infections with *Staphylococcus aureus* have nearly all a primary skin focus, a pustule, stye, boil, carbuncle, or diffuse furunculosis; fever is present more commonly than is generally supposed, and in a considerable proportion of all cases with fever there is either a true bacteræmia or a septicæmia usually with metastases. The sites of metastatic abscesses vary with different age-periods; in children osteomyelitis of the long bones is common, while in adults the kidney is often the site of election with resulting perinephric abscess. In severe septicæmia multiple lung abscesses are frequent. Skin abscesses are not uncommon, and a solitary focus in the tibia may give rise to a Brodie's abscess. In a series of ten patients, all of whom were males between the ages of 13 and 42 years, Dr. RYLE found that three had histories suggesting previous ill-health, three were overworked medical men, and one was a neglected boy in poor circumstances. In seven out of the ten there was an account of a primary focus, either a boil or other cutaneous sepsis. All had fever, and all, with one exception, developed localised abscesses; only one death occurred in the series, in a man who developed a cerebral abscess. Dr. RYLE found that these results supported his previous experience of staphylococcal fever during the war and in hospital. In estimating the prognosis he says: "Given a

sound physique, a reasonably early diagnosis, a good leucocytosis and watchful care, the great majority of cases should recover, although the course of the disease is often very prolonged."

The differential diagnosis is notoriously complex. Dr. RYLE makes the distinction from typhoid fever on the presence of an active or recent primary focus, the absence of marked splenic enlargement, rose spots or intestinal symptoms, and the presence from the beginning of a leucocytosis. He adds that the pulse in staphylococcal fever is frequently slow in proportion to the temperature. Hæmoptysis, night-sweating, and pleuritic effusion may well suggest a diagnosis of acute pulmonary tuberculosis; but again the leucocyte count, the history and sputum examinations should help to decide the issue. Dr. RYLE emphasises the frequency and diagnostic significance of sweats in staphylococcal fever, whether due to a focal or general infection; after tuberculosis and infective endocarditis it should be regarded as one of the most important of the "sweating" fevers. In discussing treatment he refers to the methods of Sir WILLIAM GULL. At a time when various remedies for rheumatic fever were being vaunted, GULL decided that without a knowledge of the natural course of the untreated disease it was impossible to judge the efficacy of therapeutic measures. He therefore reported, with close care and the collaboration of Dr. H. G. SUTTON, a series of cases treated, apart from nursing and symptomatic measures, by mint water alone. Using this series of controls, he found no evidence that the course of the disease was influenced by the remedies supposed to be specific; the work was a model of reasoned clinical research. Dr. RYLE holds that the present vogue for the use of vaccines and chemotherapy in septic states has as slender a basis as had the old rheumatic remedies which were discredited by GULL's efforts. In his view, "when the body is competing with a vast invasion of living organisms it can scarcely be regarded as a sound principle to inoculate it with a few more millions of dead organisms; in practice I have never yet been assured of resultant benefits. Nor have I seen good done by injections of eusol or mercurochrome in cases of septicæmia, or been persuaded by the literature of the subject that the happy results which sometimes follow the treatment are due to it." The principles of treatment which he recommends are three: first, good nursing; secondly, a copious fluid intake of at least six pints of fluid in the 24 hours for an adult; and, thirdly, watchful clinical care for metastatic abscesses, and considered judgment which to open and when to open them. Osteomyelitis calls for early operation. An established perinephric abscess should be dealt with without delay, and the loin may be incised with advantage in perinephritis even though no pus be found. Abscesses in skin and muscle should, of course, be opened when "ripe." Pulmonary abscesses are better left to themselves. Pleuritic fluid may be aspirated. Should a stage of weakness and low fever without organisms in the blood stream follow upon an acute septicæmic phase, sunshine and fresh air are invaluable adjuncts to treatment. Even a slight persistent pyrexia should, however, suggest the possibility of a hidden abscess, and the body should be searched systematically with a finger-tip in likely regions for any tender point or points. If there is any suspicion of a focus in bone, a careful radiographical examination is also necessary.

Mr. J. L. JOYCE's communication to the symposium will give guidance on therapeutic procedure in renal cases. He advocates conservative treatment at operation where possible, since removal of an affected kidney may be deeply regretted should its fellow become involved subsequently. But some cases which subside spontaneously without healing progress finally to complete destruction of the renal tissues; in these nephrectomy is the rational treatment. Resection of the affected portion of the kidney in acute cases does not seem to Mr. JOYCE a useful procedure, and he advises rather the relief of tension and drainage in the early stages, with subsequent nephrectomy if this conservative policy proves insufficient. Staphylococcal lesions of the skin are dealt with by Dr. H. W. BARBER. He indicates the principles of treatment in which fresh air and exercise coupled with plenty of vegetables and fresh fruit in the diet play an important part. He also finds little value in chemotherapy and considers that vaccines require great skill and experience for their proper use. As far as local treatment goes, he advises applications of iodine for boils, and emphatically disapproves of the use of poultices or boric fomentations. Typical and atypical cases where staphylococcal lesions are present are described by Dr. HUGH BARBER, Dr. W. J. COTTON, Dr. J. F. VENABLES, and Dr. LESLIE J. WITTS, while Dr. F. A. KNOTT outlines a method of differentiation between active and inactive leucocytosis which he devised primarily for another purpose. It is based on the principle that if washed bacteria are added to fresh blood, the active leucocytes will act as phagocytes, while inactive devitalised white cells will not function. This procedure has not been tried out by Dr. KNOTT in inflammatory conditions, but he suggests its possible application to prognosis. If from any hæmatological evidence a healthy leucocytosis could be distinguished from one produced by a flagging hæmopoietic system the prognosis not only of staphylococcal but of streptococcal infections might be less difficult.

Annotations.

"Ne quid nimis."

PENAL SERVITUDE FOR THE INSANE.

MEDICINE and law notoriously disagree in their views of the relation between crime and insanity. The strange tangles which result from the legal position were illustrated afresh lately in the Court of Criminal Appeal. A man named Daniel Kenneally had been sentenced at the Central Criminal Court to ten years penal servitude for wounding Arthur Broomfield with intent to murder him. Kenneally and his victim, it appeared, were fellow-workmen at a brewery. Kenneally, at the time of the wounding, said "I have had news this morning of my father's death; that man killed my father, and I have killed him. Am I right in doing so?" This was obviously a delusion; his father was not dead, and Broomfield had had no quarrel with the father. The judge at the trial thought the accused was insane; Kenneally had had a good character for ten years, but there was evidence of his having suffered from insane delusions for some time. After conviction, Kenneally was actually certified insane, and was transferred or recommended for transfer to an asylum. Three questions will occur to any medical practitioner who reads these facts. First, how came Kenneally to be convicted at all? The answer to this question appears to be that the defending counsel, seemingly thinking that the circumstances were not strong enough to justify a plea of insanity within the rule in McNaghten's case, withdrew the plea of "Not Guilty." Counsel are generally disinclined to plead insanity in

borderline cases, because insanity means an indefinite incarceration in a criminal lunatic asylum as against a definite and possibly shorter period in prison. Here, however, counsel did not plead "Not Guilty," doubtless hoping to offer reasons for mitigating the sentence. This brings us to our second question: why was Kenneally, whom (according to the Court of Criminal Appeal) the judge at trial thought insane, sentenced to ten years penal servitude? The answer must be that the judge thought this best in the man's own interest, knowing that Kenneally would receive curative treatment during his sentence. The tribunal, indeed, could hardly allow Kenneally to remain at large; there was thus no alternative to a sentence of imprisonment. Lastly, what did the Court of Criminal Appeal do about it? The answer to this third question is that the learned judges reduced the sentence to three years penal servitude, evidently shrinking from the prospect that, if Kenneally should be discharged from the asylum as cured, he would be liable to serve the balance of a long period of imprisonment. The Court of Criminal Appeal, it seems, gives the man three years in which to obtain his cure. It is all very perplexing, but what can we expect of the law which, while declaring that guilt involves a consciously criminal intention, still retains the ridiculous phrase "guilty but insane." That phrase did not form the verdict in this particular case, but Kenneally's trial is a remarkable infringement of the rules of common sense. The man should not have been found "guilty"; he should not have been sentenced to ten years penal servitude, nor yet to three. Who can doubt that the insanity from which he is now certified to be suffering was already upon him when he wounded Broomfield? How long will it be before we have some simple machinery whereby a man like Kenneally can be placed directly in some curative institution without the farce of trial, sentence, penal servitude, and appeal?

EXPLOSION OF ANÆSTHETICS.

THE American Medical Association's committee on anæsthesia accidents has come to the conclusion [1] that the hazard of explosion is negligible compared with other risks, such as post-operative pulmonary complications. Since, in their opinion, the machines and methods which are inherently liable to the accident of explosion are the very ones which greatly reduce liability to these complications, they hold that the risk of explosion should not deter anæsthetists from employing such machines and methods. But the underlying assumption is surely open to criticism, for the current view of post-anæsthetic infections of the lung is that they are determined more by the site of operation than by any other consideration. Whatever the anæsthetics employed, lung troubles follow operations on the upper abdomen more often than elsewhere. As might be expected, the report deals largely with ethylene. Explosions from ether are entirely avoidable, since for their occasion a naked flame or cautery must be used in the vicinity of the ether. But in the case of ethylene the unavoidable danger arises through electric discharge originating within the apparatus that has to be employed for administration of the gas. With present existing apparatus there appears to be no certain means of avoiding explosion, although the accident is fortunately rare. It is so rare, in fact, that the committee considers the risk should be run, in preference to employing other methods which more often cause pulmonary sequelæ, although free from explosive risk. "For full anæsthesia the concentration of ethylene is above the explosive limit. The chief risk of explosion comes when the ethylene is shut off, and the patient's lungs and the apparatus itself are washed out with oxygen or oxygen and carbon dioxide. During this process the mixture of gases passes through the entire explosive range. The mixtures of ethylene and oxygen used for analgesia during labour are highly explosive." The most explosive combination is the 25 per cent. ethylene and 75 per cent. oxygen mixture. The committee records a dramatic and fatal explosion with this mixture. Their recommendation is that non-conducting rubber should be eliminated, and so far as possible the entire apparatus should be constructed of metal. In particular they suggest that a small spirometer or a simple rebreathing chamber should be used in place of the rubber rebreathing bag.

[1] Jour. Amer. Med. Assoc., May 10th, p. 1491.

WORK OF THE ROTUNDA HOSPITAL.

THE report of the Rotunda Hospital for the year 1928–29 has been presented by Dr. Bethel Solomons, Dr. W. A. Taylor, and Dr. O'Donel Browne. During the year under review 2034 women were delivered in the hospital, and 1805 in their own homes. There were 12 deaths—10 in the hospital and 2 in the extern department, which are accounted for in the following ways: tuberculosis, 2; broncho-pneumonia (shortly after delivery), 1; sepsis, 4; accidental hæmorrhage, 2; hyperemesis gravidarum, 1; chorea, 1; and eclampsism, 1. The outstanding feature of the report is the phenomenally low morbidity-rate which obtained in the hospital during the year. Of the 2034 women delivered only 57 were morbid, as judged by the British Medical Association standard, and when it is realised that this figure includes the deaths, and that but few of the women attended any antenatal clinic, it is doubtful whether any other maternity hospital has ever produced such astonishingly good results. There were 13 cases of placenta prævia without a death, and Dr. Solomons claims that he has not lost a case from this complication during his Mastership. There were 9 cases of eclampsia with one death, 43 cases of accidental hæmorrhage, 27 cases of prolapse of the cord, 521 cases of albuminuria, and 1 case of rupture of the uterus, successfully treated by hysterectomy. In the list of presentations 67 are described as "face," and 16 as "face to pubes." Both figures are obviously wrong. In the list of operations we find that 963 operations were performed on the 2034 patients, so that nearly every second woman had to submit to some operation. Cæsarean section was performed on 34 occasions, and twice for uterine inertia. Cæsarean hysterectomy was performed twice, once for uterine inertia. The perineum was lacerated in 602 cases—a very high figure. The fact that the morbidity-rate was kept so low in spite of the large number of operations performed is a tribute to the skill of Dr. Solomons and his staff, but will in no way satisfy those who believe that conservative methods offer the only hope of lowering the present high mortality-rate associated with childbirth and had always regarded the Rotunda Hospital as a bulwark against easy but dangerous midwifery. The gynæcological department was very active, and operations were performed on 664 women. There were seven deaths, of which four might justifiably be excluded. The hospital has its own radiological department, and Dr. C. L. McDonogh, the radiologist, treats cases both with X rays and radium. The report contains a short account of the pædiatric department by Dr. B. Crichton, and concludes with a short pathological report drawn up by Dr. F. S. Bourke.

ADHESIVE SPECTACLES.

SOME of the medical and scientific papers in Germany have recently been discussing the possibility of doing away with spectacles, at least for the higher grades of refractive error, by the use of glass scales applied directly to the cornea. The principle has already been tried in the extreme case of conical cornea, and Prof. Leopold Heine has been extending it at the eye clinic of the University of Kiel.[1] Adhesive glasses (Haftgläser) as he calls them are thin glass

[1] Munch. Med. Woch., 1930, lxxvii., 6.

scales adapted to the curvature of the cornea and worn beneath the eyelids. The curvature, which varies accordingly to the refractive error to be corrected, is calculated mathematically by a special instrument. It is claimed, for instance, that a myope of 20 dioptres, condemned to wear clumsy heavy concave glasses, can by placing a pair of suitable scales under his eyelids be converted practically into a person with normal sight, with very little alteration in the appearance of his eyes. Indeed, in the *Umschau* for March 22nd photographs are given of a high myope in whom the contrast in appearance of the two types of correction is very striking. In the photograph without spectacles there is a correcting scale beneath the left eyelid, and the difference between this and the right eye is not discernible. Astigmatism, if present, automatically disappears. In hypermetropia the scales should be especially valuable where the crystalline lens has been removed for cataract and a thick convex glass has to be worn. Prof. Heine, who has made the subject his hobby for years, states that, while adhesive glasses occasion the wearer some inconvenience at first custom is soon established just as is the case with artificial dentures. The scales become a part of the eye, accommodating themselves to all its movements, and are lubricated by the lacrymal secretion. At first they can only be worn for an hour or two, but after a time more or less all day. The range of vision afforded to the wearer is much greater than with ordinary spectacles. The scales are made by Zeiss, of Jena, of special glass which is not attacked by the fluid of the eye. Prof. Heine believes they are less dangerous to the wearer than spectacles when playing tennis or cricket, since the eye is naturally protected by the socket, and the scale shares this protection. Their potential value for the short-sighted swimmer is obvious. Whether they are likely to come into common use time only will tell. At present there is little practical experience to go on; the cost is high, the initial discomfort is great, and the outlook is doubtful. But undoubtedly the same could have been said of the first dental plates, and now everyone wears them.

AMYTAL.

AMYTAL is the trade-name of iso-amyl-ethyl barbituric acid, and it has now been employed as an anæsthetic in a fair number of cases. As it is given intravenously it has the same disadvantage as the other drugs given by injection—namely, that it is only possible roughly to estimate the required dose, and this cannot be regulated by symptoms, and varied accordingly in the way that makes inhalation anæsthesia so comparatively safe. It appears that amytal, if used without risk, is rather a hypnotic than a true anæsthetic. For dogs in the laboratory it has been of great service as an anæsthetic, but for the human subject it is best used in the same way as avertin is—that is to say, as an excellent means of pleasantly inducing unconsciousness while the patient is in bed, so avoiding mental disturbance and rendering the patient easily susceptible to true anæsthesia induced by some other means. J. T. Mason and J. W. Baker [1] regard very favourably the combination of amytal and spinal anæsthesia. They say that "unless thoroughly familiar with both amytal and spinal anæsthetics the anæsthetist may find it easier first to establish the level of anæsthesia with the spinal anæsthetic, and thereafter administer the amytal. However, with studied judgment the most satisfactory of all results may be obtained by administering in the room beforehand sufficient sodium amytal to put the patient barely in a twilight stupor, such that he is free of anxiety yet can still be aroused to coöperate for the lumbar puncture." It seems that this cannot be an easy state to hit off exactly, for they remark that when the amytal is first given the patient often proves hypersensitive, and makes lumbar puncture difficult. The amount required to produce sleep is generally from grs. 3 to 9 and excitement before sleep comes is very rare. The sleep after operation is from 24 to 48 hours, and during this time the patient needs careful watching to avoid mechanical respiratory obstruction. There appears to be considerable risk of insufficient pulmonary ventilation during this period, and also a large percentage of patients require catheterisation.

[1] Surg., Gyn., and Obst., May, 1930, p. 828.

ENLARGEMENT OF THE ROYAL FREE HOSPITAL.

THE Royal Free Hospital celebrated its centenary in 1928, and to mark the occasion an appeal was launched to provide funds for development. The desired improvements, placed in the order in which they could best be carried out, were as follows: (1) provision of new quarters for the female venereal diseases department; (2) a "central extension" comprising a boiler-house and engineering department, central kitchens, enlargement of the pathological department, and new quarters for the obstetric and gynæcological unit; (3) completion of the Alfred Langton Home for Nurses; and (4) provision of private rooms for paying patients. At about the time when these ambitious proposals were made public it was announced that Mr. George Eastman, of Rochester, New York, had offered to give £200,000 for a dental clinic at the hospital on condition that an endowment fund of £100,000 was raised. Lord Riddell and Sir Albert Levy at once agreed to provide this endowment, and the result is that the clinic is nearly finished and will be opened in the autumn. The rebuilding of the venereal disease quarters is also nearly complete; the contractors have begun to put up the central extension, and it is hoped that work on the nurses' home will begin shortly. The financial position in regard to these developments may be summarised as follows:—

	Cost.		Raised to date.
	£		£
V.D. new quarters	10,000	....	10,000
Central extension	225,000	....	95,000
Nurses' home extension	65,000	....	20,000
Dental clinic building and equipment	200,000	....	200,000
Endowment	100,000	....	100,000
	600,000		425,000

Of the £95,000 raised for the central extension, £50,000 is a further gift by Sir Albert Levy. The provision of pay-beds will have to be left over till the present commitments have been met. Meanwhile the hospital is to be congratulated both on its aims and on the extent of their realisation. The public should not be slow to find money for a charity which has found so much for itself. That the Royal Free Hospital deserves their support is obvious to anyone who considers its record or its opportunity.

STUDIES IN SCARLET FEVER.

THE May issue of the *Jahrbuch für Kinderheilkunde* is devoted to infectious diseases, with papers by the various workers in the children's fever section of the Wilhelmina Hospital in Vienna. Most of them describe clinical studies of scarlet fever, and their approach to the subject makes the reader regret that pædiatricians in this country get little or no opportunity for the scientific observation of children with infectious fevers. E. Gabriel and H. Zinchinsky write on second attacks of scarlet fever, and analyse their own cases. The gross material is represented by 20,000 cases of scarlet fever admitted between 1902 and 1929. This total has to be reduced slightly because of incomplete observations, but among the large number of cases remaining there are 387 examples of second attacks—a percentage of 1·9. From the distribution of these cases in the various years and from general epidemiological considerations it appears

that fresh infection must be assumed to cover the facts. The cases were further divided into four groups: (1) those in which both attacks were unmistakable; (2) those in which there was doubt about the first attack but the second was unmistakable; (3) those in which the first attack was certain, but the second left room for doubt; and (4) a group in which during the same period of hospitalisation three unmistakable attacks of scarlet fever occurred. The first and last groups present many points of interest; in the first there are 179 cases where both attacks were observed by the authors of the paper. A typical case illustrating the material used is that of a two-year-old girl who was admitted with unmistakable scarlet fever on July 13th, 1908. Whooping-cough developed on the 26th after the onset of nephritis. By August 6th the child was afebrile, the lungs clear, and the urine free from albumin. On Sept. 11th, however, a second unmistakable attack of scarlet fever occurred with fever, rash, and sore-throat, with peeling beginning on the 25th. Particulars are given of many other cases illustrating the various groups and subsections described and the whole study of over 80 pages is full of interesting facts and deductions.

A second paper by Zinchinsky deals with endocarditis as a complication of scarlet fever. Out of the 20,000 total cases already mentioned he is only able to find ten with evidence enough to justify the diagnosis of endocarditis. Seven of them came to autopsy, and in these the scarlet fever was of the "septic" type, with endocarditis of the infective or malignant variety. The three remaining patients survived, and two of them had typical polyarticular acute rheumatic symptoms late in the scarlet fever, so that the ætiology of the resulting mitral disease was in doubt. Only one case out of all the 20,000 appeared to be a genuine example of mitral insufficiency following scarlet fever, and it is therefore concluded that this form of streptococcal infection plays no practical part in the production of permanent damage to the mitral valve. Zinchinsky also contributes a paper on two cases of primary suppurative meningitis with scarlet fever. In one of them a child of 8 years with severe scarlet fever developed otitis media in the second week, and signs of meningitis at the end of the third week. A hæmolytic streptococcus was cultured from the cerebro-spinal fluid and the child died. No direct connexion between the aural disease and the meningitis was established at autopsy. The second example began with mild scarlet fever, but developed otitis media by the thirteenth day of the illness and meningitis by the twenty-seventh day. The cerebro-spinal fluid confirmed the diagnosis of suppurative meningitis, being turbid with excess of cells, mostly polymorphonuclear leucocytes. Bacteriological cultures were sterile in this patient, and greatly to the surprise of the observers he began to make a recovery after only three days of meningeal symptoms, eventually becoming quite well.

MEDICAL BENEFIT IN NORTHERN IRELAND.

THE Medical Benefit Bill,[1] writes our Belfast correspondent, did not pass its second reading in the Senate without weighty opposition, which was voiced by senators who are strong supporters of the present Government and who represent large country districts. The opposition was based on the grounds that there was no demand for such a measure in rural areas, and that it was the most unpopular piece of legislation yet introduced. Neither the farmers, whose agricultural prospects were gloomy, nor the farm-workers, whose wages sometimes only amounted to 24*s.* per week, wanted to pay the extra penny per week for the doubtful advantages conferred by medical benefits. Great regret was again expressed that the report of the Local Government Committee had not been adopted. Protests against the rushing of the Medical Benefit Bill were made at a meeting of the Ulster Senate on June 5th, when a Government motion was put forward to suspend standing orders so that the third reading of the measure might be taken. Ultimately, however, the Bill was read a third time and passed.

[1] See THE LANCET, May 31st, p. 1204.

NATURAL HISTORY OF DENGUE.

DENGUE appeared in Athens in the autumn of 1927, and in the following year it reappeared and spread so quickly that there was a pandemic in the city and numerous other foci throughout the country, especially in the ports.[1] Among those who studied the outbreak were G. Blanc and J. Caminopetros,[2] and they have been able to record a number of important facts about the disease. They show, for instance, that dengue serum, when kept in properly sealed tubes and at laboratory temperature (15–18° C.), can preserve its virulence for at least 54 days. Man may be attacked by symptomless dengue though his blood at the same time is virulent for others. Likewise the guinea-pig shows no evidence of febrile illness after inoculation with active dengue serum, but its blood becomes virulent five days afterwards. As regards the insect vector, these workers have ascertained that *Stegomyia fasciata* has been abundant in old Greece for a long time, and it is extremely common in Athens, where it is a domestic species and breeds in the customary situations. Experimental reproduction of dengue by means of infected stegomyia was successful—in the first instance with mosquitoes actually fed upon patients, and secondly, with those caught in dengue-infected houses. By triturating the bodies of infected mosquitoes in normal saline solution and conveying the material to the island of Spinalonga, which is 350 kilometres from Athens and remained free from dengue, they were able to reproduce the disease in two volunteers from that island. Their experiences upon the rearing and breeding of stegomyia in captivity correspond on the whole with what is already known. Some individual insects captured in Athens in October survived the winter and lived over 200 days. During the whole period they were fed upon human blood and remained active even at a temperature of one degree below zero, and the cages were taken daily in a motor-car to the hospital for feeding experiments. The net result of this work was to confirm that of Siler, Hall, and Hitchens on the ability of stegomyia to transmit the virus of dengue, and the inability of *Culex fatigans* to do so. An incubation of eight days in the body of the mosquito is necessary for the virus to develop, but at a temperature of 22° C., although the virus is conserved in the body of the insect, it is not transmitted by its bite. From the experiments of Siler and his co-workers[3] it is known that the virus can be conserved in the body of the insect for very considerable periods—in these experiments for 92 days. When the temperature is depressed below 20° C. they lose their transmissibility, but regain it directly it rises to 20–22° C. The results noted by Blanc and Caminopetros differ from those of the American workers in that they find that the virus of dengue persists in the blood of patients beyond the first three days of the illness, and remains infective for 15 days and can be passed with ease through Chamberland filter L at atmospheric pressure. Many attempts were made to transmit dengue to the lower animals. The dog and the rabbit seem to be resistant to infection, while the white rat succumbs quite exceptionally. Monkeys, on the other hand, appear to be slightly susceptible and have what Nicolle and Lebailly term an inapparent infection; although they do not show any ill-effects their blood remains virulent for man for 18 days. These facts

[1] See THE LANCET, 1928, ii., 454.

[2] Ann. de l'Inst. Pasteur, April, 1930, p. 367.

[3] Siler, J. F., Hall, M. W., and Hitchens, A. P., Jour. Amer. Med. Assoc., 1924, lxxxiv., 1163.

were ascertained by experiments on nine monkeys of four different genera.

All the facts and epidemiological investigations so far accumulated go to show that a definite and persistent immunity is evoked by dengue, but convalescent serum taken after the crisis and for six months afterwards has no protective qualities. It has been found that neither the virus of yellow fever nor convalescent serum in that disease have any modifying action on the virus of dengue. This virus, it is found, cannot withstand desiccation and is probably contained in the serum globulin. It is destroyed by the action of bile in dilutions of 1·5 to 1·15 within five minutes. Pituitary and thyroid extracts have no action, and it is resistant to alcohol, formol, and Lugol's solution. In continuation of the inoculation experiments, Blanc and Caminopetros claim to have demonstrated that by repeated inoculation at short intervals with bile-treated virus, it is possible to protect to a certain extent against the fresh active virus.

ALEXANDER WOLLASTON.

THE medical profession mourns a distinguished colleague in Alexander Wollaston, the gallant and learned explorer, who was murdered in Cambridge last week. From Clifton, where he received his early education, he went to King's College, Cambridge, where he became a Fellow. He entered the London Hospital as a medical student, and shortly after qualification commenced the series of exploratory missions of which his adventurous life was largely made up. In 1905–07 he was a member of a British expedition to Ruwenzori, Central Africa; he joined an expedition which was engaged in 1909–11 in Dutch New Guinea; and of the second expedition to the same district which was in operation for the two years before the war he was leader. During the war he served as a surgeon in the Navy, was mentioned in despatches and received the D.S.C. Lastly he was medical officer and naturalist to the Everest Expedition in 1921. With this wonderful record of adventure behind him he seemed at one time content to live an English country life, and he settled in Gloucestershire with a young wife and children. But his own College sought his help as tutor, and his brief tenure of the post showed how right had been the choice. The scene at his funeral testified to the widespread grief at his tragic end.

Dr. Christopher Addison has been appointed to succeed Mr. Noel-Buxton as Minister of Agriculture and Fisheries.

AFTER a lengthy hearing, the suit brought by the Scarlet Fever Committee in the United States of America against the Lederle Laboratory, for infringement of the patent dealing with scarlet fever antitoxin and the toxin used in the Dick test, has been decided in favour of the Scarlet Fever Committee. The American patent was held to be valid.

WE regret that the name of Colonel William Coates, of Manchester, was omitted from the list of Birthday Honours given in our last issue. He has been promoted to the rank of Knight Commander in the civil division of the Order of the Bath.

BIRMINGHAM HOSPITALS CENTRE.—It was recently announced that Mr. Harry Vincent, a Birmingham business man, had promised £100,000 to the Birmingham Hospitals Centre scheme on condition that £350,000, including the sum already collected, was subscribed by June 6th. When the period of grace expired the fund stood at £378,000, and the redemption of the promise brings up the total to £478,000. Messrs. Cadbury Bros., Ltd., have given £100,000, which includes the value of the site, and the individual contributions of members of the Cadbury family amount, in addition, to £40,000.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt. R. Russell is transferred to the Permanent List.

The following appointments are notified: Surg. Lt.-Comdr. J. F. H. Gaussen to *Victory*, for R.N. Hospital, Haslar; Surg.-Lts. J. M. McNamara to *Ladybird*, and D. R. F. Bertram to *Codrington*.

ROYAL NAVAL VOLUNTEER RESERVE.

The following appointments are notified: Surg. Lt.-Comdrs. F. L. Cassidi to *Constance* and H. O. Martin to *Rodney*. Surg. Lts. R. L. Stubbs to *Victory*, for R.N. Hospital, Haslar, and F. W. Chippindale to *Champion*. Proby. Surg. Lt. W. B. Wilson to *Marlborough*. Surg. Sub.-Lt. A. F. Davy to *Champion*. Proby. Surg. Sub.-Lts. W. H. C. Watson to *Renown*; J. C. Livingston to *Rodney*; R. W. Riddle to *Concord*; H. A. Lockhart to *Courageous*; and J. F. M. Milner to *Warspite*.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. & Bt. Col. (temp. Col.) A. C. H. Gray, R.A.M.C., to be Dir. of Pathology, War Office.

The undermentioned Lt.-Cols., from R.A.M.C., to be Cols.: Bt. Col. R. B. Ainsworth and Temp. Col. D. S. Skelton.

The undermentioned Lt.-Cols. retire on retd. pay: A. W. Gibson, E. V. Aylen, and W. Davis.

Majs. to be Lt.-Cols.: Temp. Lt.-Col. A. Dawson, vice Lt.-Col. & Bt. Col. R. B. Ainsworth; Temp. Lt.-Col. C. R. M. Morris, vice Lt.-Col. A. W. Gibson; Bt. Lt.-Col. (temp. Lt.-Col) R. E. U. Newman, vice Lt.-Col. E. V. Aylen, to retd. pay; E. W. M. Paine, vice Lt.-Col. W. Davis, to retd. pay; and Temp. Lt.-Col. J. B. Grogan, vice Lt.-Col. (temp. Col.) D. S. Skelton.

Majs. to be temp. Lt.-Cols.: J. B. Grogan, E. M. O'Neill, G. B. Edwards, and J. W. L. Scott.

Capt. H. A. Hill to be Maj.

Col. E. P. Sewell, late R.A.M.C., retires on retd. pay.

Lt.-Col. J. Mackenzie, from R.A.M.C., to be Col.

Maj. & temp. Lt.-Col. E. M. O'Neill to be Lt.-Col., vice Lt.-Col. J. Mackenzie.

Maj. & Bt. Lt.-Col. W. C. Smales to be temp. Lt.-Col.

ARMY DENTAL CORPS.

Capts. J. Morrey and J. Baillie to be Majs.

TERRITORIAL ARMY.

Capt. J. W. Wayte to be Maj.

Lt. R. Lodge (late R.G.A., Spec. Res.) to be Lt.

ROYAL AIR FORCE.

Flight Lt. E. P. Carroll is transferred to the Reserve Class D (11).

INDIAN MEDICAL SERVICE.

Lt.-Cols. J. C. Clements and C. L. Dunn retire.

COLONIAL MEDICAL SERVICES.

Dr. J. A. Henderson, Senior Medical Officer, Palestine, to be Senior Sanitary Medical Officer, Jamaica.

The following appointments have been made: Dr. S. M. Bernard, Lady Medical Officer, Federated Malay States; Dr. G. F. West, Medical Officer, Malayan Medical Service; Dr. P. J. Gonsalves, Assistant Medical Officer, Seychelles; and Dr. E. B. Murray, Medical Officer (Anæsthetist), Straits Settlements.

DEATHS IN THE SERVICES.

Lt.-Col. Frederick William Gee, C.I.E., who died after an operation on June 2nd at the Royal Northern Hospital at the age of 67, was the eldest son of the Rev. William Gee, of East Coker, Somerset. He received his early education at Sherborne; afterwards he entered University College Hospital, obtained the M.R.C.S. Eng. and L.S.A. in 1886, and graduated M.B., B.S. at the University of London in the following year. A year later he entered the Indian Medical Service and was at the relief of Chitral in 1895 (medal and clasp). In 1897 he served on the North-West Frontier (Tochi clasp), and three years later, when he was promoted to the rank of Major, he was with the anti-Boxer campaign in China (medal). He also saw service in East Africa, where he was at one time base medical officer, and in the operations in Somaliland (mentioned in despatches, medal and clasp). He became Lt.-Col. in 1908. For work in Mesopotamia during the late war (mentioned in despatches) he received the C.I.E., and he retired in 1920.

The Clinical Interpretation of Aids to Diagnosis.

A Series of Special Articles Contributed by Invitation.

LXXVI.—CHEMICAL TESTS OF PANCREATIC EFFICIENCY.

PART II.*—SIGNIFICANCE OF THE TESTS IN VARIOUS CLINICAL CONDITIONS.

IN acute lesions of the pancreas the function tests are often valuable, but in chronic lesions they are often disappointing.

Acute Diseases of the Pancreas.

A patient suspected of having acute hæmorrhagic pancreatitis is generally regarded as a surgical case and in urgent need of exploratory laparotomy. None the less, in the limited time available, whilst the patient and the theatre are being prepared, Loewi's reaction, an examination of the urine (for sugar in particular), and an estimation of urinary diastase can readily be performed. The results would almost certainly be of real value to the surgeon, either in confirming his diagnosis and thus supporting a direct attack on the pancreas, or in lending no support to his diagnosis and thus possibly justifying post-

Condition.	Loewi's test.	Glycosuria.	Hyperglycæmia.	Urinary diastase* units per 1 c.c.m.	Trypsin in duodenal fluid.	Creatorrhœa.	Lipase in duodenal fluid.	Steatorrhœa.	Fat in fæces.	
									Total fat† (per cent. of dried fæces).	Split fat (per cent. of fæcal fat).
Health.	0	0	0	6·7 to 33·3.	+	0	+	0	Up to 25.	75 or over.
Acute pancreatitis.	Often +.	Often +.	Often +.	100 to 2000.	—	0 or +.	—	—	—	—
Trauma of pancreas.	0 or +.	0 or +.	0 or +.	6·7 to 200.	—	,,	—	Usually 0.	Normal or raised.	Normal or less than 75.
Chronic pancreatitis.	Usually 0.	Usually 0.	,,	Usually normal.	+ or ±.	,,	+ or ±.	0 to + +.	,,	,,
New growth of pancreas.	,,	,,	Usually 0.	6·7 to 100.	+ or 0.	,,	+ or 0.	,,	,,	,,
Chronic obstruction of pancreatic duct.	,,	,,	,,	6·7 to 100.	0	+	0	,,	Usually over 25, up to 50 or more.	Usually below 75, down to 30 or less.
Diabetes mellitus (excluding "true pancreatic").	0	+	+	Normal or low.	+	0	+	0	Normal.	Normal.
New growth of islets.	0	0	Hypoglycæmia.	Normal.	+	0	+	0	,,	,,

0, signifies negative; +, positive; + +, true steatorrhœa; —, not known with certainty; ±, present but diminished.
* The 24 hours' urine except in acute pancreatitis. † Figures refer to adults.

ponement of the operation to allow of further investigation, or suggesting that an alternative surgical approach would be more useful. It is still necessary to approach the subject with great caution since none of the series of suspected cases of acute pancreatitis (published together with control cases), has been large enough to permit dogmatic statements. The results in normal and diseased persons of the three tests which can be performed at short notice are included in the Table.

Chronic Diseases of the Pancreas.

In chronic diseases of the pancreas if two or three tests give positive results the existence of pancreatic disease is likely; but if all give negative results, pancreatic disease is not excluded. An examination of the urine, including an estimation of diastase, should be made as a routine. The naked-eye appearance and microscopical examination of the fæces likewise should always be undertaken, but other tests should be reserved as an extension of particular clinical observations and for the special investigations indicated in Part I. of this article. The usual findings in chronic pancreatitis, and in neoplasm of the pancreas, and when the pancreatic duct is obstructed—e.g., by a calculus—will be found tabulated below.

Diabetes Mellitus.

In most diabetics the islets of Langerhans alone are seriously affected. In some, judging from post-mortem histological examination, there is no evidence of damage to the islets, in which case either a functional inefficiency of the islets or a disturbance of the balance between the different ductless glands, or a disorder of other mechanisms controlling the output or availability of the internal secretion of the pancreas must be assumed. In most cases of diabetes efficiency tests reveal no abnormality of the external secretion of the pancreas, and it is assumed that the lesion or functional inefficiency is mostly limited to the islets. In a few cases there is extensive disease of the whole gland (in dogs about nine-tenths must be removed to cause diabetes), so that there is both diabetes and an inefficient external secretion. This comparatively small group has been classified separately by some writers as "true pancreatic diabetes." With the exception of this group, therefore, the external secretion tests given above are of no value in diabetes mellitus, but are useful only in the examination of diseases of the whole gland or its ducts.

Hyperinsulinism, or Idiopathic Hypoglycæmia.

Of recent years a few cases of hyperactivity of the pancreatic islets have been reported. At operation or post mortem either an adenoma or a carcinoma of the islet tissue has been found. The neoplasm may be localised, in which case it can be removed surgically, but it is more often diffused throughout the gland. The symptoms are those of a persistent overdose of insulin, and the blood-sugar is low except when suitably relieved by carbohydrates.

Summary of Results of Tests.

The Table, which gives the results of those tests of pancreatic efficiency which are generally considered the most helpful, illustrates the fact that all the pancreatic function tests so far devised are frequently equivocal.

Other Tests in Pancreatic Disease.

Certain other tests have been tried with even less conclusive results Of these Sahli's glutoid capsule test, Schmidt's beef-cube test, Winternitz's sajodin test, and Cammidge's test have now almost completely fallen into disuse.

Calcium oxalate crystals have been observed in the urines of patients with pancreatic disease, as in many other conditions, and there is nothing to indicate that

* Part I. appeared last week.

they have any special connexion with pancreatic lesions. Indicanuria has likewise been selected for notice in pancreatic disease, but whilst it is reasonable to assume that when there is a deficiency of protein-splitting ferment, there will be greater opportunities for the putrefaction of proteins by bacteria in the large intestine, there is no evidence that tests for indican are of any special value in suspected disease of the pancreas.

A similar attitude is justified in regard to tests for occult blood in fæces. A positive reaction indicates hæmorrhage somewhere in the alimentary tract. If clinically there is a carcinoma of the head of the pancreas, and blood is found in the fæces, there is a presumption, but no proof, that the growth is ulcerating into the bowel. E. C. Dodds and his colleagues have shown that the alveolar CO_2 rises during the secretion of gastric HCl and falls during the secretion of pancreatic juice, but the possibility of utilising this observation as an index of the output of pancreatic juice has not been explored. In any case the technique is too complicated to be used in routine clinical work.

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Reader in Chemical Pathology in the University of London; Chemical Pathologist to St. Bartholomew's Hospital.

Special Articles.

AN OUTBREAK OF SUPPOSED PSITTACOSIS

AT ASHTON-UNDER-LYNE, DURING FEBRUARY AND MARCH, 1930.

BY D. SAGE SUTHERLAND, M.D. GLASG.,
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With a Pathological Report

BY J. SHAW DUNN, M.D. GLASG.,
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Bacteriological Reports

BY H. B. MAITLAND, M.R.C.S. ENG.,
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THE occurrence of four closely related cases of acute illness in the same household, one of which proved fatal, following the death of a parrot in the same house, is so suspicious as to merit report in detail.

The parrot, described as a "festive Amazon," had been purchased during April, 1929. It was kept in the dining-room or the kitchen, and was stated to have suffered from catarrh and snuffles when purchased, but it appeared to be in fairly good health during the following summer. Its only abnormality was some shortness of breath when attempting to fly.

During January, 1930, it showed ill-health by ceasing to talk, and was very ill for a fortnight before its death on Feb. 23rd. There was said to be a muco-purulent blood-stained discharge from the nostrils, and the cook, who had cleared the nose with a match-stick "scores of times," placed the cage on the kitchen range for warmth. On the night of its death the owner, a medical man, had taken the cage to his bedroom and had got up to attend to the parrot. Its symptoms, in addition to the discharge from the nostrils, were hiccough and diarrhœa. The stools were loose and offensive, and contained blood. The feathers were ruffled and the wings drooped. It was morose, and became weak and very breathless before death. It was destroyed by cremation. There was no direct contact between the sick parrot and some other birds in an aviary in the house, and no illness among the small birds, although occasionally one was found dead. There is some evidence of indirect contact of these birds with other parrots. On March 17th, after the death of the parrot, the birds were certified by a veterinary surgeon to be in good health, but three were found dead a day or two later, and as a precautionary measure all the birds in the aviary were destroyed. There is evidence that the aviary was not kept with strict cleanliness, nor were rigid precautions taken against food and water being fouled by the birds. Before the arrival of the birds there were no mice; after their importation the house became overrun.

The cook states that during the winter months the parrot was frequently kept in the kitchen, and that she cleaned the cage and fed the bird. She took precautions in washing her hands before handling the household food, and was careful to see that the parrot did not contaminate food which was being cooked or consumed in the kitchen. The housemaid is said to have been afraid of approaching the bird closely.

The individuals who came most intimately in contact with the parrot were the cook and the owner, Case 1, who fondled and petted it a great deal. On Feb. 25th, two days after its death, he became ill. He had suffered from influenza some years before, and his symptoms in this illness were much more acute and sudden than he would have expected from an attack of influenza. He had been in a very debilitated state of health, due to the heavy demands of his practice, which to some extent may account for his infection. The second patient, who fell ill seven days later, was 63 years of age, and suffered from asthma. On account of his acceptance of the mayoralty of the town in the previous November, he found his public duties, added to his professional work, a severe strain, and this was further increased at the time by the medical care of his son. He had suffered from what was considered to be an attack of influenza on Feb. 6th, and attended a banquet while unwell. His indisposition lasted several days. It has been suggested that the parrot may have been infected from this illness, but it is known that the parrot was definitely ill before. It is noteworthy that, with the exception of Case 1, the infection selected the older members of the household, and the incidence does not suggest that infection was conveyed by food.

Clinical Reports.

CASE 1.—A medical man, aged 32, fell ill on Feb. 26th, 1930, two days after the death of a parrot. He suffered from chills, severe frontal headache and vertigo, and on the following day remained in bed, his temperature being 101° F. He can recall his own symptoms at the onset only of his illness, and states that he felt dazed and irritable. He was medically attended by his father and nursed by his mother, his wife, and the nurse-dispenser, with all of whom he came in close contact. After his father was taken ill on March 4th he was looked after by his uncle, also a medical man, who reports that the headache was very severe and that the patient suffered from photophobia and intolerance of noise. There was great irritability. The tongue was coated and the face pale. On March 4th the temperature was 103° F., the pulse-rate 96, and the respiration-rate 24. There was impaired resonance with fine crepitations at the right pulmonary base behind. Cough and expectoration were absent at this time. The patient complained of flatulence, and the abdomen was distended and tympanitic. There was no abdominal tenderness or enlargement of the liver or spleen. No rash was noted. The bowels were constipated and the urine contained a faint trace of albumin. Two days later the temperature was 102° F., the pulse-rate 90, and the respiration-rate 24. The patient was seen in consultation with Dr. Crighton Bramwell, who found impaired resonance and crepitations at the right base, and some loss of resonance in the axilla, but no bronchial breathing. On March 7th the temperature was 101·8° F. The tongue was still furred, and there was slight epistaxis. The general condition remained the same. He was seen by me on the afternoon of this day, and I noted loss of resonance in the right lung. Cough was very infrequent and there was no expectoration. The face was pale and sallow. The tongue was thickly coated.

The general appearance was of marked toxæmia. The patient was listless, feeble, restless, and suffered from nausea. Stools were loose and offensive. There was marked decubitus. The mental condition was then quite rational, but he was reported to have been rambling and incoherent. On March 8th he felt slightly better, but the temperature was 104° F. He felt relief after coughing up some jelly-like material. The headache, which up to now had been prominent, was less, and appetite was returning. On March 9th he had slept well, and felt much better. He was admitted to Monsall Hospital in the afternoon. His temperature was 102° F. on admission, and on the following afternoon it subsided to normal. The acute period of his illness extended to 14 days.

Bacteriological Report (H. B. M.)—Serum (collected March 7th, 1930) did not agglutinate "H" suspensions of *Bacillus paratyphosus* A, *B. paratyphosus* B, *B. paratyphosus* C, *B. aertrycke* (Mutton), *B. enteritidis*, or *B. abortus*. *B. typhosus* was agglutinated to a titre of 1 in 320. "O" suspensions of *B. typhosus* and *B. paratyphosus* B were not agglutinated. Blood (collected March 11th) was inoculated into two budgerigars and two mice, which remained well. Cultures of fæces and urine did not reveal any pathogenic intestinal bacteria.

There was no evidence for or against psittacosis. The illness was apparently not caused by any of the pathogenic intestinal bacteria. The agglutination of *B. typhosus* is not considered significant.

CASE 2.—A medical man, father of Case 1, aged 63 fell ill on March 4th nine days after the death of the parrot and seven days after the commencement of his son's illness. He had previously suffered from bronchial asthma and attacks of dyspnœa. The invasive symptoms were chilliness, pains in the limbs, severe headache, and slight epistaxis. On March 5th his temperature was 102·4° F. On the following day he had a very severe paroxysmal cough. He complained of severe pain in his temples, especially on coughing, and had some diarrhœa. The stools were offensive and slimy, but did not contain blood. The tongue was thickly coated.

When seen by me on March 7th he was propped up in bed and was very restless, muttering, and delirious. He was only able for brief intervals to collect his ideas sufficiently to give rational answers. Very fine crepitant râles were noted in both bases. The respiration-rate was not accelerated and there was no expectoration. He had slight cough, which was not unduly troublesome. The pulse-rate was 100. There was no abdominal distension. Two days later, on March 9th, when admitted to Monsall Hospital, the temperature was 101° F., pulse-rate 122, and respiration-rate 36. The urine contained a faint trace of albumin. The tongue was coated and the skin flushed. The heart sounds were regular, but the first sound somewhat muffled. There was a moderate degree of arterio-sclerosis. Expiration was prolonged over both lungs, but vocal resonance was normal. There was no abdominal distension. The patient was talkative and rambling, but slept for short intervals during the night. On March 10th the temperature was 102·8° F., the pulse-rate 120, and the respiration-rate 34. He was still restless and delirious, and spent a very disturbed night. The tongue was furred, dry, and covered with sordes. On March 11th his condition was distinctly worse. There was definite pallor and cyanosis. The temperature showed little change and restlessness was more marked. There was scattered bronchitis, but no definite consolidation. During the following night he was so collapsed that his friends were sent for. There was distinct evidence of failing circulation and commencing terminal hypostatic pneumonia. Before death he relapsed into a state of low muttering delirium, with irregularity of pulse and with occasional consciousness. His temperature at midnight was about 101° F. He died on the morning of March 13th.

At the commencement of his illness it was his opinion that he became infected from his son, whom he attended, and that the disease in both instances was contracted from the parrot.

Bacteriological Report (H. B. M.).—Serum (collected March 7th, 1930) did not agglutinate "H" suspensions of *B. typhosus*, *B. paratyphosus* A, *B. paratyphosus* B, *B. paratyphosus* C, *B. enteritidis*, or *B. abortus*. *B. aertrycke* (Mutton) was agglutinated to a titre of 1 in 40. "O" suspensions of the above first three organisms were not agglutinated. No pathogenic intestinal bacteria were found by culture from the fæces or the urine (obtained post mortem).

The disease was apparently not caused by any of the pathogenic intestinal bacteria.

Autopsy Report (J. S. D.).—There is a fairly thick layer of fat. The muscles are well developed and of good colour. The pericardium is normal and contains no fluid. There is a large soft ante-mortem clot in the right ventricle and pulmonary arteries. In addition there is much soft red post-mortem clot filling the right auricle and ventricle; the left side is almost empty. The valves are normal and the myocardium is of healthy aspect. The heart is of about normal size and weight. The aorta shows moderate atheroma throughout. The right pleura shows a small adhesion at the apex and a broad fibrous adhesion to the diaphragm, but no recent pleurisy. The right lung is well aerated and free from consolidation; there is some general congestion and very slight œdema posteriorly. The left pleura has a small fibrous adhesion at the apex but no recent pleurisy. A sector of the upper lobe of the left lung anteriorly is somewhat collapsed. On section there is consolidation of the anterior and upper two-thirds of this lobe, while the posterior part shows only slight œdema. The consolidation is red-grey in colour and nowhere as firm as in lobar pneumonia. Its margins are ill-defined and it lacks uniformity, reaching maximal intensity in the front of the lobe and in an area 5 by 7 cm. at the apex; at the latter site there is also much œdema. The lower lobe is

FIG. 1. FIG. 2.

Temperature charts in Case 1 (March 9th to April 1st) and Case 2 (March 9th to 13th).

well aerated and shows only slight hypostatic œdema. The trachea is normal, apart from some patchy congestion. The larger bronchi contain some mucus but present no apparent lesion. In the small intestine there is no special congestion of the mucosa and no ulceration. The Peyer's patches are atrophic and invisible. In the submucosa of the upper two metres of the jejunum there are about a dozen small circumscribed bodies of pale yellow colour. They measure 2 to 5 mm. in diameter and are of soft consistence suggesting small abscesses (? chyle cysts). The omentum contains much fat. The liver is of about normal size; on section it is generally pale with slight nutmeg appearance; probably fatty infiltration. The spleen is about twice the normal size, tumid, and fairly firm. The pulp is dark red and full, scraping out on the knife. The mesenteric lymphatic glands are small and inconspicuous, of normal aspect. The pancreas is normal, apart from some adiposity. The kidneys are of normal size and the capsules slightly adherent. The surface is finely granular from arterial atrophy, but there are no hæmorrhages or other apparent lesion. The urinary bladder shows only very slight congestion of the mucosa. The prostate is fairly large and fleshy. The pia arachnoid is thin and transparent, and there is a slight excess of clear fluid but no special congestion of pia or grey matter. The puncta cruenta are fairly prominent on section, but there are no hæmorrhages.

The other structures appear normal.

Histological Report (J. S. D.).—In the more solid parts of the pneumonia the *lung* alveoli are filled, though not distended, by fibrino-cellular exudate. The cells are mainly neutrophile polymorphonuclear leucocytes and are usually not in large numbers. Red blood corpuscles occur in the exudate in places. Towards the margins of the solid patches, where consolidation is less dense, there is less fibrin and more residue of œdemic fluid. In these parts the congested capillaries of the alveolar walls frequently show small hyaline thrombi. Sections stained by Gram's method and by Leishman's stain have been examined but no cocci resembling pneumococci or other organisms have been found in any part. While this does not exclude the presence of such organisms, it would suggest that they must, if present, be in small numbers. The medium and larger blood-vessels in the consolidated areas are free from thrombus. The bronchioles in the pneumonic areas show some desquamation of epithelium and occasional accumulations of polymorphonuclear leucocytes. There is also some

congestion of the vessels in their mucosa, but no cellular infiltration. The appearances are not such as to suggest a primary bronchial lesion, as the inflammatory changes are not more advanced in the bronchioles than in the lung, nor is the pneumonia more advanced immediately around the terminal bronchioles than at the peripheries of the lobules. The bronchi in the non-consolidated areas and one of the main bronchi, separately examined, show desquamation of epithelium, which is no doubt due to post-mortem autolysis.

The *liver* lobules show moderate congestion of the central sinusoids and slight fatty infiltration at the periphery In almost every lobule there is a focus of necrosis of liver cells varying in size from about 1/10 to about 1/2 of the lobule area. These foci are always near the centre of the lobule and are usually confined to one quadrant; larger ones appear to surround the central vein. In these areas the dead cells have slightly shrunken protoplasm which stains strongly with eosin; the nuclei have disappeared. The sinusoids between the dead cells contain fairly numerous polymorphonuclear leucocytes and occasionally small adherent eosinophil thrombi. No organisms are recognised in relation to the necrosed areas.

The only notable feature of the *spleen* is a loading-up of the pulp with red blood corpuscles, giving an appearance of diffuse hæmorrhage in places. Leucocytes are present in small numbers, but there is no appearance of large mononuclear cells such as accumulate in the spleen in typhoid affections. No definite coccal or bacillary organisms are found in films stained by Leishman's stain in sections stained by Gram or Leishman's stain. The films of *bone marrow* show abundant myelocytes and leucocytes, but no definite departure from normal. The glomeruli of the *kidney* are slightly congested. The tubules show some early post-mortem autolysis but no necrosis or other definitely pathological change. In the parietal cerebral cortex and mid-brain there is more congestion of the vessels than was assumed from naked-eye examination. No certain pathological changes can be made out in any part.

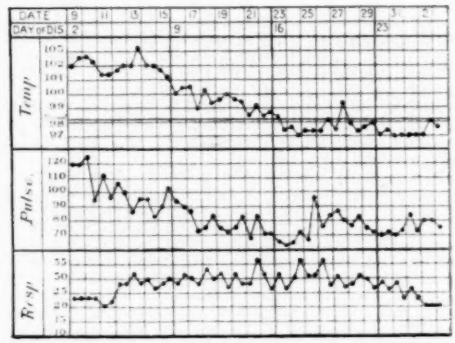
Summary.—The main features are the pneumonia in the upper lobe of the left lung and changes in spleen and liver which point to an infection with toxæmia. There is nothing definite to suggest an intestinal infection. The pneumonia is not quite of the usual type. It has the main histological features but not the characteristic gross distribution of a lobar pneumonia. On the other hand, it does not suggest a lesion disseminated by the bronchi, being confined to segments of one lobe and showing no histological evidence of a primary bronchiolar lesion.

CASE 3, the wife of Case 2 and mother of Case 1, was aged 62. She had as premonitory symptoms, malaise and langour for a few days, and took to her bed on March 8th. She complained of severe headache and slight epistaxis and of feeling tired and shivery. The temperature was 103° F. There were no physical signs in the chest or abdomen and her sleep was undisturbed. She was admitted to Monsall Hospital on March 9th. There was a previous history of fairly good health. On admission the temperature was 102° F., pulse-rate 120, and respiration-rate 24. At 2 o'clock on the same morning the temperature was 101·4° F., pulse-rate 84, and respiration-rate 28. The tongue was heavily furred and dry. There was some stomatitis. The heart sounds were regular. Examination of the chest showed no obvious abnormality. She was somewhat constipated, but had no distension, tenderness, or rigidity of the abdomen. On March 10th the temperature was 103° F., pulse-rate 126, and respiration-rate 24. She had a fairly good night, but complained of slight headache and malaise. The bowels were opened after an aperient. The stools were greenish in colour and offensive, without mucus or blood. The tongue was heavily furred. An occasional moist râle was heard in the left lower lobe of the lung. The heart was noted to be slightly irregular in rhythm, with a reduplication of the second sound. On March 11th the temperature was 102° F., pulse-rate 112, respiration-rate 20. The urine contained a trace of albumin. There was shortness of breath and slight headache.. The face was flushed, and of a dusky toxic appearance. On the 12th she had slept little. The tongue was dry and in the left lower lobe numerous moist râles were heard. An occasional moist sound was audible at the right base. The heart was still irregular and the urine contained a dense cloud of albumin. There was a very marked loss of appetite. On the 13th the temperature was 103·2° to 102° F., the pulse-rate 88, and the respiration-rate 32. She slept for only one hour. The stools were loose and pea-soupy in character and there was severe diarrhœa, the bowels being opened 14 times in 24 hours, with some incontinence both of bowels and urine. After digitalis the heart sounds became more regular and of better quality. On March 14th, after restriction of diet and the administration of pulv. cret. aromat. c. apio, the diarrhœa became less; the patient slept better. On the 15th the temperature had fallen to 101° F. and she felt more comfortable, but continued to be somewhat dazed and apathetic and answered questions with hesitation. Cough was very slight. The urine contained a heavy deposit of albumin. From the 16th to the 23rd the temperature subsided gradually to normal. The stools were normal and the urine contained a faint trace of albumin. The pulse-rate dropped to 72 per minute. Vocal resonance was normal on the 18th, but a few scattered crepitations were still audible. Slight œdema of the right ankle and foot was observed. On the 19th her temperature did not exceed 100° F., but her general condition was still poor and occasional irregularity of the pulse was noted. She was feeble, and answered questions slowly. The tongue was still heavily furred. On the 20th there was œdema of both ankles. The skin was dry and appetite poor. A blood count made on this date showed: red blood corpuscles, 5,003,000; white blood corpuscles, 8000; polymorphonuclear leucocytes in excess; hæmoglobin, 70 per cent. On the 21st the temperature was 99° F., pulse-rate 64—volume and tension poor—and respiration-rate 32. She was still very drowsy and indifferent. On the 22nd the temperature subsided to normal and the general condition was slightly improved. The pulse was more regular and the tension better. Mentally she was rather brighter. On the 23rd she was reported to be distinctly improving. There continued to be a faint trace of albumin in the urine.

Bacteriological Report (H. B. M.).—Blood (collected March 11th) was inoculated into two budgerigars and two mice, which remained well. Cultures of fæces and urine did not reveal the presence of any pathogenic intestinal bacteria. The sputum was inoculated into two mice on March 13th. Both died after five days, but no pathogenic bacteria were isolated from them. No pneumococci or hæmolytic streptococci were detected in cultures of the sputum.

There was no evidence for or against psittacosis. The disease appeared not to be caused by any of the pathogenic intestinal bacteria.

FIG. 3.

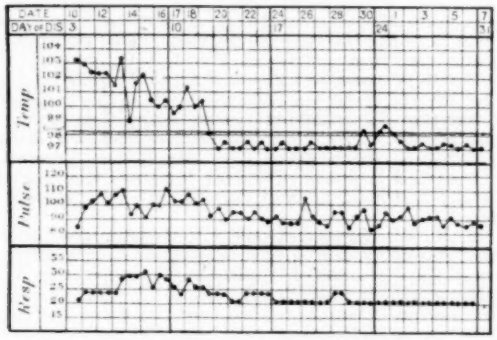


Temperature chart in Case 3 from March 9th to April 3rd.

CASE 4.—A nurse dispenser, aged 50, states that she had felt tired for some days, although she continued to carry on her duties. On March 8th she was troubled with headache, backache, pains in the limbs and occasional shivering, and remained in bed. On March 9th she suffered from diarrhœa, and from the 10th there was some bleeding from the nose. On admission to Monsall Hospital on March 10th her face was flushed, her temperature was 103° F., and she had severe headache, but no abdominal distension. The spleen was not enlarged. Some moist râles over the anterior surface of the right lung were noted, and also some fine crepitations over the left base, but there was no loss of resonance. The heart was normal. On the following day the tongue was coated, the temperature 102° F., the pulse-rate 98, and the respiration-rate 24. The face was still flushed and there was severe frontal headache. She was very depressed. Diarrhœa had ceased and cough was absent. There was an herpetic eruption on the upper and lower lips, and twitching of the facial muscles, but the reflexes were normal. On March 12th the temperature was 102·5° F., pulse-rate 108, and respiration-rate 24. Headache had disappeared. The face was still flushed. On March 13th the temperature was 103·4° F., and the pulse-rate 108. There was some slight headache and cough and the tongue was still thickly coated and flabby. There was some loss of resonance and harsh crepitations at the right base behind, also some fine crepitations below the left scapula. On the 14th there was a morning remission of temperature to 99° F., and in the afternoon it was 101·8° F. On the 15th

the temperature was 102° F., pulse-rate 98, and respiration-rate 32. The stools were relaxed. There was a short dry cough, but no expectoration. The face was still flushed. The mental condition remained clear. There was some impairment of resonance at the right base and the tongue was furred. The slight facial twitching was now absent. The skin was moist and the headache was very much less. The stools were loose and the motions offensive. On the 17th

FIG. 4.



Temperature chart in Case 4 from March 10th to April 7th.

slight blood and mucus were reported in the stools and the tongue was still coated. The temperature had fallen to 99·5° F.; the pulse-rate was 104, and the respiration-rate 26. The face was less flushed. On the 18th the stools were frequent and relaxed, normal in colour, with no blood or mucus or abdominal distension. Cough had ceased. The tongue continued to be furred on the dorsum, but clean at the edges and tip. The heart sounds were regular. No albumin was noted in the urine. She made some complaint of weakness, and on the 19th lassitude was very marked, but the appearance of the stools approached normal and the bowels were open 4 times in the 24 hours. On the 20th the temperature fell to normal. The tongue was less furred and the patient felt better generally. A blood count showed: red blood corpuscles, 4,080,000; white blood corpuscles, 8000; hæmoglobin, 70 per cent. A differential count showed: polymorphonuclear leucocytes, 65 per cent.; large lymphocytes, 10 per cent.; small lymphocytes, 25 per cent.

Bacteriological Report (H. B. M.).—Blood (collected March 11th) was inoculated into two budgerigars and two mice, which remained well. Cultures of urine and fæces did not reveal the presence of any pathogenic intestinal bacteria.

There was no evidence for or against psittacosis. The disease was apparently not caused by any of the pathogenic intestinal bacteria.

Commentary.

All the cases show a somewhat remarkable parallel in their symptomatology, which corresponds with that of cases recently described in the medical journals as parrot disease. All suffered from an acute infection of a toxæmic nature and of sudden onset, associated with pyrexia, severe headache, chills, coated tongue, slight cough, epistaxis, and anorexia, and in all cases there was some pulmonary involvement of an indefinite nature. Defervescence showed a very gradual and regular decline, with absence of morning remissions. The pulse-rate was at no time greatly accelerated in relation to the temperature. At some period diarrhœa was a feature to a greater or lesser extent, and was sometimes associated with abdominal discomfort or distension. There was no splenic enlargement or rash. A dazed appearance, mental torpor, and a tendency to cyanosis was present in all. Muttering delirium and insomnia were features of the most acute period of the illness. Marked prostration resulted and convalescence was slow.

While the features of the four cases described are indistinguishable from influenzal pneumonia, catarrhal symptoms at the onset were not a prominent feature and pulmonary involvement was late. Moreover, these cases occurred when influenza was not prevalent, no other member of the household or relation suffered from an influenzal illness of a more benign type, and the weight of the clinical evidence tends to the opinion that these illnesses were in some way definitely associated in ætiological relationship or had some common source of infection. On the other hand, there is evidence which cannot be overlooked, that the acute illnesses were fortuitous and due to an independent source of infection unconnected with the parrot. The occurrence of exceptional cases of illness of an influenzal nature in four of the less resistant individuals of the household, predisposed by age or other cause, at the coldest period of the year, may be considered not improbable. The absence of a definite organism, or the presence of a specific virus common to the four cases, lends weight to this view. The post-mortem appearances in the fatal case bear some resemblance to fatal cases observed elsewhere associated with parrot disease. Presuming that the parrot had suffered for a considerable period from infective disease communicable to man, it is difficult to explain why these cases should have occurred in such close relationship to one another, unless it be presumed that the disease is capable of being communicated from human sources, and that the first victim infected the other members of the family. Fatal disease in parrots may exhibit similar symptoms, although due to varying causes, and there may be more than one disease in parrots which is infective to man. There is the further possibility that a parrot may be susceptible to human influenza, and that the virulence may be increased by animal passage. Increased virulence may account for the frequent occurrence of severe influenzal attacks in association with sick parrots. The destruction of the parrot rendered it impossible to obtain any definite scientific evidence of the nature of the disease in the parrot, and consequently, in the absence of further proof, it would be unwise to dogmatise regarding the definite nature and source of infection of these illnesses.

MEDICINE AND THE LAW.

A PARTNERSHIP DISPUTE.

THE almost invariable lesson of litigation over a medical partnership dispute is that dragging the matter into the law-courts has done nobody any good. Excessive publicity is usually given to domestic and personal details which are not really of public interest; accusations are made which, even if rebutted, leave unpleasant recollections; money is spent which could have been turned to better use; finally, the medical profession as a whole receives an advertisement of a kind which it does not greatly desire. Such a dispute has lately been occupying several days of the time of a judge of the Chancery Division. Two practitioners, nearly 60 years of age, evidently found further coöperation impossible after two and a half years of partnership. One of them served the other with a notice purporting to dissolve the partnership and removed the other's name from the surgery during his absence. The other doctor thereupon applied to the High Court for an injunction restraining his partner from excluding him from the partnership premises; he asked also for a declaration that the notice for termination of the partnership was void and he finally requested the Court to dissolve the partnership. The defendant doctor alleged gross neglect and breaches of the partnership articles. He too asked that the judge should order a dissolution. As this was what both parties desired, some simpler and less expensive remedy than litigation might well have been found. But the allegations of neglect naturally were an obstacle to peaceful settlement; moreover, the partnership agreement attached pecuniary consequences to a dissolution; in effect (it was stated), if the defendant were entitled to a dissolution, he would have to pay the plaintiff £450; if the plaintiff were in the right, the defendant would have to pay £1500. Mr. Justice Bennett had to decide whether the plaintiff (1) had grossly neglected the

business of the partnership, or (2) had committed a breach of the articles so as to entitle the defendant to expel him from the partnership. This involved examining evidence about two classes of acts on the part of the plaintiff—namely, acts of alleged negligence in connexion with patients and conduct calculated to lead patients to think lightly of the defendant by criticising in hostile or contemptuous words the defendant's diagnosis or treatment. In any event, it will be observed, it was the plaintiff's conduct which was in question although it was the plaintiff who initiated the proceedings. The judge came to the conclusion that the defendant doctor failed to prove that the plaintiff had deliberately and intentionally made such criticism as was alleged; "I do not think," he said, "that the plaintiff at any time intended to be disloyal to his partner." The other part of the case was more difficult. There had been an allegation about a little girl on whom it was afterwards found necessary to perform an urgent operation for appendicitis. Here the judge considered that the plaintiff's conduct had fallen short of the standard which the parents and the partner had a right to expect. Another allegation related to a refusal to go out at 1.45 A.M. to attend to a patient; this, in the circumstances, the judge held not to be necessarily gross neglect of the business of the partnership. A third incident concerned a refusal to attend a patient at 9 P.M. some six miles away; the plaintiff's explanation was that it was one of the defendant's patients, that the defendant was known to be returning in half an hour and that it was proper to leave the case to be dealt with on his return. The judge held that the plaintiff refused to go and see the case because at that stage of the partnership he was not disposed to turn out late at night to see one of his partner's patients; "no doubt the plaintiff's temper got the better of his judgment." These incidents, in the judge's opinion, amounted to this: there was one case of neglect by the plaintiff and one case in which his loss of temper led him into an error of judgment. Mr. Justice Bennett did not think that one act of negligence or one error of judgment could be interpreted as gross neglect of the partnership business. Taking the case as a whole, he was not prepared to say that the plaintiff had been guilty of gross neglect. The clause in the articles required proof of some regular course of careless conduct or something of the nature of wilful neglect. This proof was wanting. The plaintiff consequently succeeded in his action; the defendant was not entitled to expel him. At the same time it was clearly a case in which it was quite impossible for the partnership to continue; the court would, therefore, decree a dissolution. The defendant was ordered to pay the costs of the action except those of the two items on which the plaintiff had been found at fault.

The inevitable question arises—why was this unfortunate litigation not avoided? Ample opportunity exists for settling such disputes by arbitration. Partnership articles can provide for such settlement and, what is more important, partners must realise that it is their duty to their profession to avoid washing their dirty linen in public. The Chancery Division has perhaps never had better judges than at this moment. Mr. Justice Bennett, in particular, with his early training at the common law, is the ideal judge for an issue of disputed fact. But the recent case remains on record as an instance of litigation which is better avoided. The first method of preventing such incidents is to take more care in entering upon a partnership between persons whose temperaments may be incompatible. No medical partnership can be carried on satisfactorily unless there is mutual goodwill between the partners. The second is to settle the affair quietly before some arbitrator in whom all parties can repose trust and thus to avoid taking the whole world into one's confidence. It is well for any partnership agreement to contain a clause that any question, dispute, or difference shall be settled by arbitration.

GENERAL MEDICAL COUNCIL.

SUMMER SESSION, MAY 27TH–31ST, 1930.

(Concluded from p. 1263.)

COMMITTEE BUSINESS.

Public Health Committee.

Sir John Moore moved the adoption of the report of the Public Health Committee. The number of exemptions from parts of the D.P.H. course had given rise to some anxiety and a table of the exemptions for the year was therefore once more printed in the report, individual cases being described at some length. The committee urged licensing bodies to scrutinise with great care certificates presented to them and to make stringent inquiries to ascertain whether the student had carried out the prescribed rules.

Mr. K. W. Monsarrat asked if there might not be some elasticity for service candidates who desired to take the diplomas of tropical medicine and of public health while on leave from colonial appointments.

Sir George Newman replied that the point had been under consideration and had been referred to a subcommittee. Meanwhile every case was most carefully considered on its personal merits with regard to the actual experience and position of the applicant. It must, however, be clearly realised that the diploma of public health had been instituted for persons seeking posts in this country and that experience of public health duties abroad, however valuable, was no substitute for the special knowledge required here.

Pharmacopœia Committee.

Dr. H. H. Dale introduced the report of the Pharmacopœia Committee, which recorded that 1955 copies of the British Pharmacopœia, 1914, had been sold in the year ending May 24th, 1930. The committee had completed the task of considering additions to the Pharmacopœia. They had been guided by the following general principles:—

(*a*) They have accepted the opinion expressed by the Committee on Civil Research, Subcommittee on the British Pharmacopœia, that "the British Pharmacopœia should contain only those standard articles which are in general use throughout the Empire. Where it is desired that official recognition should be given in any part of the Empire to any local drugs or local substitutes, we suggest that this should be left to the Governments concerned, which, by means of supplements or addenda to which they may accord the necessary sanction, can meet any local requirements or introduce any modifications or alternatives desired."

(*b*) In the case of groups of substances containing the same or similar active principles—e.g., vegetable substances containing tannic acid—it has been thought advisable to reduce the number of drugs described.

(*c*) Certain substances which are little used or are believed to be of doubtful therapeutic value have been omitted.

(*d*) Preparations such as the hypodermic injections and certain of the "liquors" have been omitted on the ground that standard formulæ are not necessary, and that it is preferable that potent drugs should be prescribed by the physician in quantities by weight as required.

Special formulæ for suppositories have been omitted and a general method will be described, leaving to the discretion of the physician the dosage of the medicament to be incorporated. Formulæ for several mixtures and for some of the compound pills and powders have been omitted.

It had thus been possible to reduce the number of substances described and to make room for more precise tests of purity and for biological tests and other new information. The Pharmacy Subcommittee had nearly finished a systematic review of those galenical preparations which will be described in the new volume and had made good progress with the definition of new preparations. The subcommittees dealing with special drugs had presented a number of monographs to the Commission. Progress had been made with the question of vitamin tests and an investigation into a standard colour test

for cod-liver oil had been initiated. A survey of the nomenclature had been made with a view to bringing it into line as far as possible with the International Agreement and the United States Pharmacopœia. The text of the International Agreement appeared as an appendix to the report.

Executive Committee.

At the meeting of this committee immediately preceding the meeting of the Council the Registrar reported that the following names had been restored to the Register from which they had been erased under Section 14 of the Medical Act.

John M. Bickerton, Arthur F. R. Dove, Percy L. Hope, Thomas J. McCarthy (I.), Grace C. C. Mackinnon (S.), William A. Malone (I.), Sylvia Marsh (I.), David Morrison, Daniel J. Mulholland, Thomas S. Reeves (I.), Annie E. G. Rowlands, Laurence A. Waddell (S.), John F. W. Waters.

It was resolved to raise the price of the office copy of the Medical Register to 10*s.* and that this price be charged to the Stationery Office.

THE NEW VOTING PAPER.

Sir Holburt Waring presented the report of the Finance Committee on the question of the voting paper.[1] The proposed new form is shown below.

ELECTION OF DIRECT REPRESENTATIVES FOR ENGLAND, 19 .

MEDICAL ACT, 1886.
(49 and 50 Vict. c. 48.)

ELECTION TO THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM BY REGISTERED MEDICAL PRACTITIONERS RESIDENT IN ENGLAND.

BALLOT PAPER.

..... Vacancies.

The Registered Medical Practitioner voting must put a mark thus X against the name or names of the candidate or candidates for whom he votes.

Column for the Voter's Mark X.	Names of Persons Nominated.	Registered Address.	Registered Qualifications.
	A.		
	B.		
	C.		
	D.		

1. Each Voter shall mark the Voting Paper delivered to him with a X against the name or names of the person or persons (not exceeding the number of persons to be elected) for whom he intends to vote. Any mark placed on the Voting Paper by which the Voter may be afterwards identified renders the vote invalid.
2. The Voting Paper must be folded face inwards.
3. The Voting Paper must be placed inside the Identification Envelope.
4. The Identification Envelope must be securely fastened.
5. The Voter must sign the declaration printed on the identification Envelope.
6. The Voter must place the Identification Envelope inside the covering envelope.
7. The Voter must dispatch the covering envelope to REGISTRAR, , and it must be received there on or before the .
8. If the Identification Envelope is transmitted by post postage must be prepaid.

No matter other than the Voting Paper should be placed inside the Identification Envelope.

Please examine the extract from the *Register* placed on the Identification Envelope and mark thereon any corrections you desire to be made. A form for the registration of additional qualifications will be sent on application.

Dr. Bone agreed that this was a great improvement, but thought the same formula should be used on the ballot paper as in No. 1 of the instructions. The President pointed out that the instructions 1–8 were laid down by the Privy Council and therefore obligatory. Dr. Bone therefore withdrew this criticism but still objected to the notes at the bottom of the page as irrelevant and unjustifiable, and suggested that there should be an indication that the instructions were to be torn from the ballot paper at the dotted line. It was agreed to add at the top a notice that the practitioner, before voting, should read the following instructions. The President pointed out that the first note at the bottom was a warning to the voter, in his own interest, as the ballot papers were not opened by the Registrar but kept until a fixed date.

[1] THE LANCET, 1929, ii., 1256.

ROYAL INSTITUTE OF PUBLIC HEALTH.

THIRTY-FOURTH ANNUAL CONGRESS.

THE Annual Congress of the Royal Institute of Public Health was held at Portsmouth from June 4th–9th, with Major-General J. E. B. SEELY as President, and the Lord Mayor of Portsmouth (Councillor J. E. SMITH) as Honorary President. The importance of the Navy and the Dockyard to the town was reflected in the scientific communications, for discussions on marine medicine and hygiene, including the industrial hygiene of dockyards, were prominent. Members of the Congress had the advantage of visiting the Royal Naval Hospital and H.M. Dockyard, and of going over a great ship.

Health of Men at Sea.

Presiding over the Services section, Surg. Rear-Admiral H. C. WHITESIDE, officer-in-charge Haslar Hospital, set out some of the problems of the seafaring doctor. Nowadays the difficulties of fresh water supply have been overcome in the Navy; every ship carries a distilling plant. The recruiting naval medical officer must be an efficient oculist, able to detect any visual defect, whether of refraction or of colour-vision. In tropical waters the doctor must pay great attention to the condition of the food, especially vegetables and fish. He must also be prepared to determine the potability of shore water used for any reason on board. In our great ships many of the ratings are, of necessity, troglodytes, living and working in enclosed spaces, perhaps unduly crowded, in spite of the special arrangements made to provide ventilation. When a wave of influenza occurs, we have the very best conditions for a manifestation of latent tuberculosis. In spite of all that is being done the Navy invaliding rate from tuberculosis is still too high. Surg.-Captain L. M. MORRIS pointed out the present need of the Navy for the more intelligent type of man. The smaller the Service the greater the care required in the selection of personnel. During recruiting much attention is paid to the candidates' temperament; the parent is asked to fill up a form in some detail, so that the recruiting medical officer can form an idea as to the mental health of the candidate, and the presence or absence of the temperamental qualities required for the Navy.

Dr. W. HANNA (Liverpool) considered that cadets and others who intend joining the mercantile marine should receive a training in hygiene on training ships, and qualify in ambulance and first-aid work; all should receive some instruction in the dangers of venereal disease. Any pamphlets on venereal disease intended for sailors should contain the necessary information, not isolated but incorporated with directions for the maintenance of general good health.

At the Royal Naval Dockyard, Surg.-Commander H. D. DRENNAN is responsible for the medical care of the workers. In addition to the medical examination on entry, a periodical examination is made of certain classes of workers. All lead workers appear before the medical officer fortnightly; during the two years Surg.-Commander Drennan has been in the Yard he has not come in contact with a single case of lead poisoning.

The vision of welders is tested monthly and of motor transport drivers yearly. Divers are medically examined every week, and before each dive of over five fathoms. The fresh water tank party are examined monthly and on each occasion before they enter tanks, the diseases especially looked for being enteric fevers, diarrhœa and dysentery, venereal and skin diseases, otorrhœa and pyorrhœa; the party wear canvas suits and gymnasium shoes. The excreta of workers who have suffered from enteric fever are examined in the Royal Naval Hospital on three occasions to prove their freedom from infection. When workers who have contracted tuberculosis are certified free from infection, employment is found for them in the open air or in large airy workshops. Dr. M. ASTON KEY (Portsmouth) praised the Dockyard arrangement whereby half the men employed were taken on permanently, thus taking away the awful shadow of the "sack." Excellent canteens are provided. It was a serious mistake for men living far away to scurry home to their meals midday; the extra time spent in rest was of distinct value.

Tropical Medicine.

Presiding over the Tropical section, Dr. J. B. CHRISTOPHERSON (London) discussed in his address motives in dress. Men's dress, owing to outdoor pursuits, and the necessity of defence against enemies, had developed principally along the lines of protection and utility; with women adornment had always been almost the entire motive. But the average woman would not be able to stand the tropics unless she clothed herself for health, convenience, and utility. Dr. G. CARMICHAEL LOW (London) hoped that the biochemical tests recently devised for the diagnosis of climatic bubo would be more widely used in order that their value might be determined.

State Medicine.

Presiding over the Section on State Medicine, Prof. H. R. KENWOOD emphasised the importance of the maintenance of adequate nutrition to keep up the resistance of children to infectious disease. Dr. C. KILLICK MILLARD (Leicester) proposed an improved and extended application of Mr. E. D. Simon's suggestion of rent allowances for children. To pay for these, Dr. Millard proposed that the rents of municipal houses should be increased all round by, say, 1*s.* 6*d.* a week. Additional sources of money would be a lodger tax and a tax on all children who were earning and living at home. He contends that such a scheme could be made self-supporting. The new Housing Bill (No. 2) by providing for differential rating would enable some such scheme to be adopted with local modifications. Dr. C. O. STALLYBRASS (Liverpool), in his paper on variation in virulence in the course of epidemics, said that modern tendencies had been to discount the importance of variations in the pathogenicity of the organism. He took diphtheria as a crucial example in which death was due to the potency of the diphtheria bacillus and not of the secondary invaders. Dr. Stallybrass adduced statistical, clinical, and bacteriological evidence that the diphtheria bacillus had varied in potency in the course of recent epidemics both in Liverpool and Czecho-Slovakia. In Prague Drs. Feierabend and Schubert had found that in strains of bacilli from fatal diphtheria in which antitoxin therapy had failed, the potency of the bacillus was increased. Investigation was required not only of each disease, but also of individual epidemics. Dr. R. J. BLACKHAM (London) called attention to the therapeutic value of lactic acid milk powders in the feeding of infants. Sir BRUCE BRUCE-PORTER (London) pleaded for the institution of honorary librarians in hospitals.

Tuberculosis.

In the Section on Tuberculosis Sir HENRY GAUVAIN (Alton) expressed his belief that healing resulted from constantly changing conditions of intensity of sunlight; abundance of sunshine was often not desirable in debilitated patients at the beginning of treatment. Dr. O. BERNHARD (St. Moritz) confessed to an uneasy feeling about placing patients with surgical tuberculosis among patients with the open pulmonary or laryngeal form of the disease; they were, he thought, more susceptible to droplet infection than the healthy. Dr. JAMES WATT (Godalming) suggested that slight cases of pulmonary tuberculosis whose career might be damaged by having been to a sanatorium, should be treated in a special ward at a convalescent home. Dr. JANE WALKER (London) who, she said, makes a point of employing delicate servants, finds that after they visit the local tuberculosis officer it is very difficult to get them to do any work; tuberculosis officers should not perpetuate the evils of the sanatorium. Councillor S. W. BEALES (Grimsby), finding it difficult to carry on the work of a tuberculosis care committee without a fund, had tried various ways of acquiring money, and had discovered that dances at dance halls, arranged on the 50-50 basis, were a fruitful source of income.

Industrial Hygiene.

Sir THOMAS OLIVER (Newcastle-upon-Tyne) presided over the Section on Industrial Hygiene. Dr. W. J. O'DONOVAN (London), after emphasising the multiple nature of cheiropompholyx, complained of the strenuous desire of patients and approved societies that panel and works' doctors should certify any dermatitis of the hands as due to occupation; county court juries are apt to look upon contrary medical evidence as hired perjury. Dr. PROSSER WHITE (Wigan) gave an interesting communication on sensitisation in the diagnosis of the traumatic dermatoses which should be studied in the unabbreviated form. Dr. H. M. VERNON (Industrial Health Research Board) dealt with warming by the panel system of low temperature radiation. Concealed hot-water pipes and electrical heating by means of insulated wires embedded in plaster in the ceiling had been used for some time; a more recent method was to pass a current through a zig-zag ribbon layer of graphite material embedded in the lower side of fire-clay plates suspended 10 feet above the floor.

Mosquito Control.

A visit was paid to the British Mosquito Control Institute on Hayling Island. Here for ten years Mr. J. F. Marshall has been carrying on scientific work to help local authorities and private individuals to exterminate biting mosquitoes in this country. British mosquitoes comprise 26 species—three anophelines and 23 culicines; about three-quarters of these species bite, especially at night in hot, stuffy weather. Five species breeding in fresh water are common, the others are rare. In most inland places six species of mosquito are found; at the seaside the number is brought up by the addition of two other species which breed in salt water. The seaside is worse than inland for two other reasons—mosquitoes breed better in salt water; these salt-water mosquitoes can fly further than fresh-water species. In view of the forthcoming visit of the British Medical Association to Winnipeg, it is of interest to know that a strenuous anti-mosquito campaign is being carried out there.

The amenities of Southsea with its open common and pleasant gardens, the view of a sea crowded with its liners, yachts, and battleships, the harbour, and the forts, contributed largely to the success of the Congress.

ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER.—This hospital last year admitted 2038 in-patients who cost £8 0*s.* 8*d.* each. The 9521 out-patients cost 7*s.* 1*d.* each. The reconstruction of the out-patients' department, including a separate casualty department with theatre, and an enlarged X ray department, will be completed during the present year. There was a deficit in 1929 of £2338, which brings the total debt on the general maintenance fund to over £14,000.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

The Ideal and the Real in Public Health.

THE Governor of New York, Mr. Franklin D. Roosevelt, has announced the appointment of a special health commission to study the public health law and to make an appraisal to determine the possibility of a more effective application of the latest results of scientific research in preventing disease and conserving health. In making the announcement, the Governor quoted from the speech of Dr. William H. Welch delivered at the recent celebration of his eightieth birthday in Washington: "While public health is the foundation of the happiness and prosperity of the people and its promotion is recognised as an important function of government, how wide is the gap between what is achieved and what might be realised; how inadequate is the understanding of the public concerning the means adopted to secure the best results." Mr. Roosevelt said that it was his intention to reduce this gap.

The chairman of the new commission is Dr. Livingston Farrand, the President of Cornell University. He is supported by a very strong commission composed not only of prominent medical men such as Dr. Linsly Williams and Dr. Simon Flexner but also by lay experts in public health administration and successful business executives. The commission is charged to submit "any conclusions and recommendations which it may deem wise relating either to the legislative or administrative aspects of public health."

Prevention of Blindness.

On May 24th the Leslie Dana Gold Medal, which is awarded annually in recognition of "the most outstanding work in behalf of prevention of blindness," was presented to Dr. George E. de Schweinitz, of Philadelphia. The presentation address was made by Dr. Franklin Royer, medical director of the National Society for the Prevention of Blindness, which has just published its fifteenth annual report. Its efforts now seem to be very largely directed to removing the handicap of defective vision. Forty-five sight-saving classes have been inaugurated during the year, making a total of 350 such classes now in existence, in 95 cities of 21 States. Through the use of large type books, movable desks, ideal lighting, and special teaching methods children with visual defects are given a full education and at the same time learn how to conserve their remaining sight. The Society estimates that approximately 5000 such classes are needed. To train teachers for this work special courses will be given during the coming summer term at various universities.

A Competition for Cities.

The awards are announced of the first annual health contest sponsored by the U.S. Chamber of Commerce. The 108 competing cities were divided into five classes accordingly to population, and the five winners are Milwaukee, Syracuse, N.Y., East Orange, N.J., White Plains, N.Y., and Sidney, Ohio. The primary object of this competition was to assist in reducing economic losses in the United States due to unnecessary illness and death, through the activities of local chambers of commerce or similar associations in coöperation with their official health agencies. The ratings were based upon the answers to a fact-finding schedule, copies of which were sent to the health officers of the contesting cities. The main factors considered in grading were the organisation and equipment of local health departments; financial support of health work, both official and voluntary; facilities for health information and education; water-supply; milk-supply; sewage disposal; and health laws and ordinances. The United States Chamber of Commerce hopes to continue the contest from year to year. From the local standpoint this offers a helpful yardstick for the measurement of actual accomplishments with the possibility of gaining national recognition and is of special benefit in enlisting the interest of the leading business interests in promoting efficient city health administration.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

B C G.

IN Ujpest, a factory town adjacent to Budapest where hygienic conditions leave much to be desired, there is a considerable death-rate from tuberculosis. About two years ago, encouraged by the good results obtained with Calmette's vaccine, Dr. Rudolf Dvorcsák, senior physician of the tuberculosis dispensary of the Social-Political Institution, began to give it to selected infants in the town. Only those children were chosen who undoubtedly lived in an infected environment, and could easily contract the disease. Of several hundred infants treated five or six have died with manifest tuberculosis. In one case where both father and mother were tuberculous the six eldest children are alive, whereas the seventh, who received B C G, has succumbed to a virulent infection. Although the medical staff of the hospital and dispensary never suggested that these deaths were caused by the vaccine, the lay press, on hearing of the Lübeck fatalities, has given ear to unauthorised rumours and has alarmed the Hungarian public by asserting that the five or six fatal cases at Ujpest were due to B C G. Dr. Dvorcsák states resolutely that this is not so, and that Calmette's vaccine has proved efficacious in very many cases under his control. He is going to report to the Royal Medical Society, but meanwhile the use of B C G. has been discontinued.

Compulsory Baths in Poland.

The Polish Chamber of Deputies will shortly consider a new Bill on obligatory bathing. The object of the Bill is to enforce bathing on people who have no bathrooms in their houses, and for the time being the law will only run in cities and towns where there are bathing establishments. It is proposed that the Government should put up bathing plants in the smaller towns and large villages, so that poor people will have access to bathing during the winter months. They will have nothing to pay for their bath excepting soap and towel, which they may bring themselves. The public health magistrates will employ controllers to supervise the bathing booklets, each of which will contain 12 tickets to be used within three months. Exemption from bathing will be granted to people suffering from infectious or contagious diseases, skin troubles, tuberculosis, &c. It is not without interest that party politics has managed to raise objection even to such an obviously useful Bill. Certain opposition papers say that the soap trust has paid the Government to introduce it, and argue that it violates personal freedom since nobody should be forced to bathe when he has no mind to do so.

GLASGOW HOSPITAL FOR SICK CHILDREN.—In 1929 5359 patients were admitted to this hospital, which Dr. J. F. Fergus, President of the Royal Faculty of Physicians and Surgeons of Glasgow, described at the annual meeting as having gained "a European and almost a world-wide reputation." They came from every part of Scotland and were all under 13 years of age. Of the 20,000 children under 5 who annually join the Glasgow schools, 85 per cent. suffer from decayed teeth, 6 per cent. from rickets, 5 per cent. from enlarged tonsils, and 2 per cent. from discharging ears. The directors appeal for a research fund of £20,000 to investigate the causes and best means of preventing and curing the diseases of infancy and childhood. The corporation of Glasgow has granted the hospital exemption from parochial and education rates in virtue of the powers recently acquired from Parliament.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are 1929 statistics of two county boroughs, one borough, and five urban districts. All the reports refer to the exceptionally severe epidemic of influenza, which increased the mortality from respiratory diseases in varying degrees.

Name of district and estimated (R.-G.) mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Infant and neonatal mortality.	Youngchild (1–5 yr.) mortality.	Maternal mortality from childbirth.
Sunderland C.B. .. (184,000)	22·3	17·0	1·54	1·36	4·6	2·1	109/33	105	6·1
Eastbourne C.B. .. (58,570	11·0	13·5	0·65	1·83	2·9	2·5	53/20	29	0·0
Edmonton U.D. .. (73,547)	17·6	10·8	1·17	1·20	2·0	2·4	62/—	23	3·8
Worcester C. and U.D. .. (52,320)	15·0	15·3	0·84	1·89	3·3	3·2	60/22	29	5·1
Pontypridd U.D. .. (45,320)	17·8	12·4	0·86	1·06	2·0	2·4	67/35	—	11·1
Bentley-with-Arksey U.D. (16,320)	18·5	10·2	0·86	0·55	2·6	1·2	119/—	—	9·9
Margate B. .. (29,580)	14·2	13·0	0·74	1·65	1·6	2·1	46/—	—	7·3
Ilfracombe U.D. .. (8,906)	14·0	14·6	1·01	1·34	2·6	4·6	56/—	—	0·0

Registered stillbirths per 100 live births:—Sunderland 4·1, Edmonton 3·6, Worcester 4·2, Pontypridd 8·0, Bentley-with-Arksey 3·6, Margate 3·2.

C.B. = County Borough. B. = Borough. U.D. = Urban District. C. = City.

Sunderland.

Dr. A. S. Hebblethwaite gives a photograph and plan of the 20-bedded pavilion which has been added to Grindon Sanatorium, and was opened by the Duke of York on Oct. 31st. This brings the accommodation for surgical tuberculosis in children up to 50. The new pavilion has six two-bed cubicles and two four-bed wards. The maternity and child welfare scheme has been extended by the institution of two new infant welfare centres in outlying districts and one new antenatal centre. There are now four antenatal clinics, including one at the maternity home, for mothers, who intend to be confined in that institution. The births numbered 4111, and 1463 women attended the antenatal clinics. The medical functions of the board of guardians are to be dealt with by the public assistance committee for a period of 12 months, after which the health committee will deal with these transferred medical services. During the transition period the medical officer of health will act as medical officer to the public assistance committee.

The housing problem remains unsolved, although much renovation work has been done. During the year 410 new houses were erected as compared with 725 in the previous year. Overcrowding notices cannot be followed up owing to the lack of alternative accommodation. The measles death-rate was the highest since 1909. The deaths numbered 151, of which 25, 69, 27, 15 and 10, occurred during the first to the fifth year of life respectively. Deaths of children under two years from diarrhœa and enteritis were also high, giving a rate of 21·2 per 1000 births as compared with 8·1 in England and Wales. As shown in the table, the death-rate from respiratory diseases with influenza was unusually high, and 424 deaths were ascribed to pneumonia, giving a death-rate from this cause alone of 2·3. Of the 424 pneumonia deaths, 108 were those of infants, 90 occurred in the second year of life, and 54 at the age-period 2 to 5. An attempt is being made to raise funds for the establishment of a central institution for the radium treatment of cancer, but up to the present the response to the appeal has been disappointing. Both hospitals, however, have agreed to increase their facilities for the earlier detection and earlier admission of cancer patients.

The water-carriage system has now been generally adopted and extended to the area added in April, 1928. There is only one swimming bath in the town, and better facilities are needed. The chief smoke offenders in the borough are laundries, breweries, public baths and washhouses, and small vertical boilers connected with locomotives or travelling cranes at the North dock; the latter are a nuisance to the seaside resort of Roker. The 14 houses in the Newcastle-road area, which are "all electric," with the exception of one coal fire in the living room, continue to be satisfactory to the tenants. A certain amount of difficulty is found in enforcing the orders made under recent Acts for informing the purchaser of the country of origin of produce. The chief difficulty appears to be the liability of fruit labels becoming displaced. There are now only 381 cows kept in the borough, and among these the veterinary inspector discovered two which were giving tuberculous milk. Of 106 samples of outside milk examined biologically, three were found to be tuberculous.

Eastbourne.

Dr. W. G. Willoughby reports that the birth-rate was the lowest on record, and that there were 151 more deaths than births. The council has continued its policy of allotting municipal houses only to persons with families. Since 1921 houses have been built at double the pre-war rate, and the population is better housed. Nevertheless there are still nearly 200 instances where the council could have good tenants and very considerably improve existing uncomfortable conditions. A feature of the year 1929 was the end of the hut-dwellings. The last was vacated in January and the site is now practically covered with permanent dwellings. The huts were a boon when adapted in May, 1919, but became a burden by 1926. There are now 795 municipal houses and 18 more in course of construction. The council have accepted a number of unsatisfactory tenants with children, and comparatively few have failed to repay this consideration.

The births in the borough numbered 643; of these, 221 took place in the municipal maternity home and 84 extern cases were attended by the midwife from the home. The antenatal clinic at the home was attended by 318 expectant mothers. General practitioners are invited to use this clinic for their patients, and did so in 110 instances. There were no maternal deaths attributed to childbirth in the borough, but one maternal death unconnected with maternity occurred in the home from acute nephritis and heart disease. The municipal home-help is paid a salary of 35*s.* per week, and attended 48 homes for household duties in maternity cases, and eight homes for the relief of expectant or nursing mothers or mothers with children ill.

Edmonton.

Dr. H. W. Harding doubts if his urban district gets its moneys' worth from an expenditure of £10,000 annually on the Enfield and Edmonton Joint Isolation Hospital. Scarlet fever is so mild nowadays, and when epidemics do occur there is a tendency to overcrowd the wards and cause return cases. The majority of the fatal cases of diphtheria are doomed before admission because they come in too late. During epidemics the hospital cannot accom-

modate carriers because there is no room, and the virulence of diphtheria and the presence of carriers, especially nasal carriers, appear to go hand-in-hand.

The council has an arrangement for maternity beds at the North Middlesex Hospital, and is responsible for fees at the rate of 6*s*. per day, which are collected from the patient before admission. The admission order is signed by Dr. Margaret Outram, who is in charge of the antenatal clinic, and sees each case before admission. The council patients admitted during 1929 numbered 19, of whom 9 paid for themselves and 10 were assisted by the council to the extent of £33 14*s*. The births numbered 1299, and 164 women made 833 attendances at the antenatal clinic. Two motor ambulances for non-infectious cases are run by the fire brigade, and carry a Novita resuscitating apparatus, which has been used successfully in cases of gas poisoning and drowning. The brigade also keep a bedside oxygen apparatus which can be obtained by local doctors at a cost of 5*s*. per cylinder. Dr. Harding records with pleasure that building operations in the district have lessened the facilities for the encampment of van-dwellers.

The new schools are a great improvement on the older ones. A new school is shortly to be erected and on the same site an open-air school, which will accommodate not only cases of malnutrition but also physically defective and partially blind children. In 1928 there was a plague of flying beetles which was thought to be due to migration caused by the exhaustion of the natural food of these insects, which are carnivorous in habit. The plague did not recur in 1929. The arrangement made with the guardians for the treatment of rickets and marasmus by ultra-violet rays at the North Middlesex Hospital at a cost of 1*s*. per exposure, has been continued. Sixteen cases are reported as cured, but 26 discontinued treatment against medical advice. Dr. Outram makes a special report on the cases treated at the centres with irradiated milk. Good results are claimed. The cases included 28 nursing mothers, 3 debilitated mothers, 9 expectant mothers and 29 "toddlers," and two sets of twins. The "Sun-ray"—Scheidt's Cold Process-Milk was used, and the Foodstuffs Irradiation Co., Ltd., helped by providing free sun-ray milk for necessitous cases. The Express Dairy Co. provided the milk at a cost of 3*d*. per half pint, and in no instance was more than half a pint given daily.

Worcester.

Dr. Mabyn Read in his thirty-ninth report says that better housing of the poorer citizens is still the most urgent of the problems in the city, and goes on to refer to the great changes by the removal of the worst of the slums during his 39 years' term of office. Overcrowding, he says, as a factor inimical to good health, is second only in importance to insufficient food. Of the 268 council houses erected during 1929, 80 have been allotted to overcrowded families, but there are still 107 overcrowded families on the register. The majority are in poor circumstances, and more houses at a rental not exceeding 7*s*. per week are needed. The city has many old houses and crowded courts, and the only new application under the Housing (Rural Workers) Act, 1926, could not be entertained because the alterations involved a sacrifice of light and air.

The new small-pox hospital on the site of the old City Hospital has been completed, and provides excellent accommodation for the city and the adjacent area of the county. The treatment of the city water-supply by chlorine has been a great success. The refuse-tips of the city have again proved a nuisance to adjacent houses. One has been closed in consequence, and the others are to be periodically sprayed, but Dr. Read points out that it is necessary to deposit the refuse in smaller layers and to keep the tips covered with a sufficient quantity of earth. The Cash captive bolt pistol is in general use for stunning cattle and calves before slaughter at the public slaughter-houses, and at the 22 registered and one licensed private slaughter-house, and the slaughtermen would not like to go back to their old methods. The meat regulations are well observed. Many of the local butchers do a large retail trade in the villages and hamlets in the county, and one firm has a fleet of motors fitted with hooks, glass shutters, and electric light, wherein to display their goods. Two retailers and a wholesaler were fined for selling sausages containing sulphur dioxide without declaring the presence of a preservative. In the last annual report (see THE LANCET, 1929, ii., 579) the difficulty experienced in discovering the offending cow of a herd of 21, which was giving tuberculous milk, was described. Ultimately, in August, 1929, a cow with udder tuberculosis from this herd was slaughtered at the knackers' yard.

An ancient city like Worcester is specially liable to rat-infestation, and the rat campaign is continued all the year round, and not only in rat week. The report to the Ministry of Agriculture shows that wire-cage traps are largely used. Examples are given of the capture of 24 and 18 live rats in single cages in one night. During "rat" week the first prize was won by a ratcatcher with a total of 48, and the second with 44. One ratcatcher held a post-mortem upon a doe-rat, and found she would shortly have had a litter of 16.

Pontypridd.

Dr. A. G. M. Severn describes his district as typica of the distressed coal-mining area of South Wales. There has been an increased supply of free milk through the maternity and child welfare scheme and the schools. For the 12 months ended March 31st, 1930, £945 was spent, as compared with £380 in the previous year on milk and foods supplied through the centres. There are 8940 children on the school registers, and 606, or 6·8 per cent., were granted milk and biscuits on the recommendation of the school medical officer. This again is an increase on the previous year. The scheme for discovering the cases of malnutrition among the scholars is described. All children are weighed before beginning school meals and again at intervals of three months. The scheme has been much facilitated by the school teachers' help. The low-lying part of the town was flooded in November and December, owing to the unprecedented rainfall. The total fall for the year was 59·41 inches, and of these 28·03 fell in November and December. Effectual relief measures were adopted. There is still a shortage of working-class houses, but the 40 municipal houses built during the year, and the additional 40 sanctioned will do much to alleviate overcrowding. Mr. C. L. Saies, formerly part-time, has been appointed full-time dental surgeon, thus improving the dental service of both welfare centres and schools. A new health centre is to be erected, which will provide accommodation for all the usual clinics, with ultra-violet light, ionisation, and increased facilities for orthopædic treatment. In referring to the unusually high maternal mortality, Dr. Severn mentions that facilities have been provided for hospital treatment, specialists' consultations, and for free supply of antiserum to medical practitioners desiring it. One of the nine childbirth deaths was assigned to sepsis and eight to "other causes." The Public Health and School Medical Services are well coördinated, and the pre-school children are effectively followed up from infancy up to school entrance.

Bentley-with-Arksey.

Dr. A. B. Dunne shows that the "all causes" death-rate of 10·2 becomes 12·0 when standardised. Measures have been taken to prevent the recurrence of flooding in the Bentley moor district. The council has erected about 800 houses since the war. They are of a good class, of brick, built usually in pairs, and not more than 12 to the acre. Each house has a good-sized garden. The dirty and verminous tenant, says Dr. Dunne, has not been so much to the front as in previous years. There are about 270

cows in the district, and amongst these one was found to be giving tuberculous milk, while six were slaughtered on account of pulmonary tuberculosis and three on account of tuberculous emaciation, One case of small-pox was notified. The rash appeared on April 19th; the patient was delivered of a child on April 22nd; no one suspected small-pox until April 28th. The woman bore no signs of vaccination. The baby was born apparently healthy, but subsequently developed the disease and died. Neighbours and young children had been freely in and out of the house, but no secondary cases occurred —an illustration, says Dr. Dunne, of the very slight infectivity of this type of small-pox.

Margate.

Dr. Rowan McCombe says the population at the height of the season exceeds 100,000. There are four midwives in practice, two being municipal. The latter are paid by salary, and earn the greater part of it in fees. Dr. McCombe considers the very small cost to the ratepayers is amply justified. Extensions of the water-supply and sewerage system are in progress, and the arrangements for the discharge of the sewage are so satisfactory that "no trace of sewage has been seen on the Margate foreshore for very many years." The erection of a total of 356 municipal houses has alleviated the housing problem, but there is still a demand for small houses that could be let at an inclusive rent of not more than 12*s.* per week. A considerable number of underground rooms are used for sleeping during the summer months. The rainfall was only 16·85 inches during 1929, whilst the hours of bright sunshine were 1942·4.

Ilfracombe.

Dr. D. C. Adam says the population during the height of the season is about 40,000. One of the events of the year was an outbreak of diphtheria, chiefly affecting the scholars in Standards 1 and 2 of Hermitage School. There was no reason to suspect milk. There were 50 cases in all, mostly in the month of March. There had been five cases of diphtheria in December, 1928, traceable to a carrier, and Dr. Adam thinks that he found another carrier to connect the December cases with the March outbreak. One case proved fatal—a boy of 7, who died of heart failure on the tenth day of the disease. Owing to the shortage of houses many poor families are paying exorbitant rentals for rooms in houses constructed for the use of one family. The public abattoir has been reconstructed and enlarged, and the new buildings were formally opened on August 29th by Sir Robert Gower (Chairman of the R.S.P.C.A.). A description of the new building is given. There are also three private slaughter-houses near the centre of the town, "and their presence in such situations is very undesirable." Of the 860 cattle slaughtered and inspected only 21 showed evidence of tuberculosis, and "this exceptionally low percentage" is thought to be due to the youth and quality of the cattle slaughtered, and the fact the animals, owing to the mild climate, are only housed for a very short period during the year. The rainfall for the year was about 45 inches, and the hours of bright sunshine 1748·3.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 31ST, 1930.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 327 (last week 304); scarlet fever, 1939; diphtheria, 1088; enteric fever, 73; pneumonia, 975; puerperal fever, 52; puerperal pyrexia, 99; cerebro-spinal fever, 11; acute poliomyelitis, 4; acute polio-encephalitis, 1; encephalitis lethargica, 15; continued fever, 1; dysentery, 5; ophthalmia neonatorum, 97. No case of cholera, plague or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on June 3rd–4th was as follows:—Small-pox, 449 under treatment, 15 under observation (last week 462 and 13 respectively); scarlet fever, 2016; diphtheria, 2266; enteric fever, 25; measles, 712; whooping-cough, 77; puerperal fever, 26 (plus 17 babies); encephalitis lethargica, 121; poliomyelitis, 1; "other diseases," 18. At St. Margaret's Hospital there were 14 babies (plus 5 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 48 (14) from measles, 5 (2) from scarlet fever, 24 (5) from whooping-cough, 32 (8) from diphtheria, 37 (9) from diarrhœa and enteritis under two years, and 29 (4) from influenza. The figures in parentheses are those for London itself.

The fatal case of enteric fever outside London occurred at Sunderland. Five deaths from measles were reported from Warrington; not more than 2 from any other great town. Liverpool reported 6 deaths from diphtheria and 5 from diarrhœa.

The number of stillbirths notified during the week was 307 (corresponding to a rate of 43 per 1000 births), including 68 in London.

Correspondence.

"Audi alteram partem."

BLOOD CULTURE IN DIAGNOSIS OF ENTERIC INFECTION.

To the Editor of THE LANCET.

SIR,—To Dr. Eustace Thorp's further remarks (in your last issue, p. 1235) on enteric and the Widal test I should like to add some remarks of my own. The Widal agglutination test is an estimation of antibody formation on the part of the patient, either in response to actual infection by *B. typhosus* or *paratyphosus*, or as the result of prophylactic inoculation with a vaccine of these organisms. In the early stages of enteric infection there is probably present in all cases a bacillæmia, which is accompanied by a leucopenia—indicating an inhibition of the hæmopoietic centres as a result of this blood infection.

(1) In one group of cases this bacillæmia, either on account of a mild type of infection, or a good resistance on the part of the patient, may be transitory, and in such a satisfactory antibody response and a positive Widal reaction develop comparatively early.

(2) In a second group the infection may be more intense, or the patient's ability to respond less satisfactory with the result that antibody formation is delayed and the Widal reaction only obtained from the blood serum later than the normal time.

(3) In a third group of cases, either on account of the intensity of the infection or the total lack of an immunising response on the part of the patient, and in spite of definite clinical evidence of a typical typhoidal infection, a fatal issue may result without the appearance in the blood serum of a positive Widal reaction.

Frequently in such cases a blood-count estimation showing the presence of a leucopenia and a deficiency in the polymorph response may be as definite a sign of typhoidal infection as the Widal reaction. But in all three groups of cases the earliest and most helpful test is a blood culture taken into sterile bile. Three to five c.cm. of blood (with sterile precautions) are introduced in 10 c.cm. of bile, and the recovery of the infecting organism, whether typhoid or paratyphoid, is usually obtainable within 24 hours.

In three recent cases of pyrexia of four to five days' duration, in which a typhoidal infection was suspected but where there was little clinical evidence to support the diagnosis, the bile blood culture in each case gave such a positive result. In one case for typhoid, and in the other two for paratyphoid B, and in each case a Widal was not positive from seven to ten days subsequent to the definite diagnosis having been made by this means.

The technique is in no way difficult, and the bile easily sterilised and kept on hand for such emergency use, and this

is a method one feels should be used more promptly and in all suspicious cases of typhoidal infection. Ordinary broth cultures, although occasionally successful, are not nearly as reliable as the simple bile blood culture above referred to, probably because a certain degree of agglutination of the organisms present in the cultures takes place during incubation of the blood, and prevents satisfactory growth, while in the bile culture through a physical alteration of surface tension, agglutination is prevented and growth of the infecting organism if present is encouraged.

(4) A fourth group of cases are those in which relapse occurs after the development of a definite Widal reaction through some intercurrent depression of the patient's resistance, or the development of an ecyphylactic focus, reinfection of the blood stream takes place accompanied by marked reduction or disappearance of the Widal reaction, which may later again develop. During this period of relapse the blood culture may again be found positive, and the condition thus proved to be a real typhoid relapse and not due to a secondary septic infection.

The Widal reaction must obviously depend not only upon the virulence of the infecting organism, but perhaps even more upon the ability of the patient to produce a satisfactory immunity response, and this will account for the variable findings which have been recorded, and which do not justify the conclusion that the Widal test as such is unreliable, but that the patient's immunity responses to a definite infection cannot be guaranteed, for without the development of protective agglutinins in the patient's serum the test cannot give a positive result. A marked positive Widal after 10 to 14 days' pyrexia indicates a satisfactory prognosis as far as the typhoid infection is concerned, although it gives no guarantee that secondary infection may not develop, or an intestinal perforation or hæmorrhage occur. A mild and delayed Widal reaction in a severe case of infection probably gives evidence of a less satisfactory prognosis from a typhoidal point of view.—I am, Sir, yours faithfully,

E. CRONIN LOWE, M.B.E.

Liverpool, June 6th, 1930.

THE MECHANISM OF PULMONARY COLLAPSE.

To the Editor of THE LANCET.

SIR,—Dr. Watson-Williams's quotation from "All Quiet on the Western Front" has an interesting bearing upon the nature of pulmonary collapse. Experience in surgery of the chest indicates three facts:—

1. When one side of the chest is *opened freely*, as for the removal of an osteo-chondroma of the ribs, the lung collapses momentarily but is blown out forcibly to the chest wall with every expiration, the later expansions being more distinct than the first.

2. When *discission* of a thickened pleura is done for chronic collapse of the lung, provided that the incisions are numerous, cross-cut, and deep enough to reach the reddened surface of the lung proper, the cuts open up as spaces, followed by expansion of the lung in proportion to the thoroughness of discission.

3. When *decortication* is performed (a more serious and sanguinary operation) the decorticated lung comes up to the surface like a piece of soft red sponge.

The inherent tendency is for the exposed lung to expand or be blown out to the chest wall.

I am, Sir, yours faithfully,

THOMAS CARWARDINE.

Clifton, Bristol, June 6th, 1930.

FATAL AND MEDICINAL DOSES.

To the Editor of THE LANCET.

SIR,—In an annotation last week (p. 1246) entitled The Object of a Pharmacopœia you note a very unsatisfactory position in regard to drugs producing general anæsthesia—namely, that the effective anæsthetic doses of the drugs in use are more than 50 per cent. of the fatal doses, "a smaller margin of safety than with any other class of important drugs." In the case, however, of at least one anthelmintic this unenviable record is completely broken. For carbon tetrachloride whose structure and pathological effects are similar to those of chloroform, the fatal dose is 1·5 c.cm.; while the dose advised as effective and used in tens of thousands of hookworm infections is 3 c.cm., or twice the fatal dose. This advised dose has naturally killed a varying proportion of those who have taken it. Further, it has been freely administered without troubling to discover whether any particular recipient was infected, in which case it remains unknown whether individuals so sacrificed should have been treated at all. We were next confronted with the statement that such herd treatment, which used double the minimum lethal dose and which had killed, had justified itself because with a minimum of trouble it had much reduced the worm load of a community. Those who receive herd treatment are certainly among the lowly, yet no advocate of such treatment has contended that they should be held no higher than cattle. Surely they should receive no treatment without previous diagnosis, and unless it is based on that humane principle of close attention to the fatal dose which your annotation, justifiably but wrongly, assumes to be always and everywhere accepted by medical men.—I am, Sir, yours faithfully,

Ealing, W., June 7th, 1930. CLAYTON LANE.

AREA OF PRIMARY INVOLVEMENT IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—With reference to Dr. Hanan's letter in your last issue, there appears to be no doubt that several different opinions have been expressed as to which portion of the lungs is first affected in pulmonary tuberculosis. In my experience, there appears to be a difference in the two sexes, definite signs appearing first more frequently on the right side in males and on the left in females. Some years ago I took out figures in respect of 1232 sputum-positive cases, and after eliminating 152 instances in which it was impossible to decide which lung was more extensively affected, I found that 59 per cent. of males showed more advanced disease on the right side when first examined and 61 per cent. of females on the left side. These figures refer to the days before X ray facilities were available locally, and I am proposing to take out further figures relating to X ray films only. I am convinced that there is a definite difference according to sex. I am, Sir, yours faithfully,

W. H. DICKINSON.

Newcastle-upon-Tyne, June 7th, 1930.

DISCOVERY OF BLOOD GROUPS.

To the Editor of THE LANCET.

SIR,—In your issue of May 3rd (p. 977) S. C. Dyke reviews the history of the discovery of the blood groups in a way which inadvertently does such injustice to the discoverer of the groups that I am sure Dr. Dyke will himself welcome a correction of the mistake.

Dr. Dyke states that "the first steps towards the identification of the blood groups were made by Landsteiner," and further, that "the existence of certain differences in the blood of human beings, differences which enabled them to be classed into four groups, was discovered and reported independently in Europe by J. Jansky and in America by W. L. Moss." The facts are that Landsteiner, in 1900, reported[1] his discovery of the three more common groups, at the same time correctly recognising the underlying serologic constitution of the different bloods and pointing out the significance of his findings

[1] Landsteiner, K.: Wien. klin. Woch., 1900, xiv., 1132.

with respect to blood transfusion. Shortly thereafter, Decastello and Sturli,[2] the latter a co-worker of Landsteiner, with Landsteiner's permission, continued the study and they reported, in 1902, the existence of the fourth group. Landsteiner's review in Oppenheimer's Handbuch (1908–09) briefly describes the four groups. Jansky's study, reported in 1907, was undertaken merely with the purpose of seeing whether there was any special relationship between the blood groups and neuropathology; no such relationship was found, and Jansky simply numbered the groups in the order of their frequency, contributing nothing further to the general knowledge of the blood groups. Moss, in 1909–10 reached the mistaken conclusion that the blood groups depended upon three pairs of iso-agglutination elements.[3] He numbered the groups without reference to frequency, and pointed out the difference between his numbering and that of Jansky. He referred to Landsteiner's original paper but omitted mention of the report by Decastello and Sturli and of Landsteiner's review. Von Dungern and Hirschfeld, in 1910, confirmed Landsteiner's logical conclusion regarding the serologic constitution of the different bloods and made the important discovery of the inheritance of the agglutinable substances A and B. Upon Landsteiner's suggestion, made through the Committee on Blood Groups of the National Research Council, the designation of the groups by letters has been adopted by important societies in this country and by the United States army and navy.

I am, Sir, yours faithfully,

ARTHUR F. COCA, M.D.,
Formerly Chairman of the Committee on Blood Groups of the National Research Council.

June 7th, 1930.

THE POSITION OF THE MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—During the next two weeks the Society of Members of the Royal College of Surgeons of England will circularise all Members resident in the United Kingdom and Ireland soliciting a postal vote on the question of some representation of the Members on the Council of their College. Having regard to the great amount of work and expense entailed thereby, it is earnestly hoped that all Members will respond promptly and thus make their views known.

I am, Sir, yours faithfully,

ERNEST E. WARE, President.

60, Welbeck-street, W., June 10th, 1930.

[2] Decastello, A. V., and Sturli, A.: Münch. med. Woch., 1902, p. 1090.

[3] Moss, W. L.: Trans. Assoc. Amer. Phys., 1909, xxiv., 419; and Bull. Johns Hopkins Hosp., 1910, xx., 63.

VICTORIA PARK HOSPITAL.—Last year the City of London Hospital for Diseases of the Heart and Lungs treated 11,982 patients at a cost of £37,714. Of these 1094 were in-patients who stayed on an average 53 days, and their weekly average cost was £3 9*s.* 4·59*d.*, an increase of 5*s.* 6*d.*

EPPING FOREST HOSPITAL.—The Marquis of Carisbrooke recently opened extensions to this hospital which have cost £9000. The enlargements include a ward as a memorial to the late Lord Lambourne, provided by the Freemasons of West Essex, who raised £2000 for the purpose.

SHEFFIELD AMBULANCE SERVICE.—Last year the Sheffield ambulances carried 31,000 patients and travelled 134,000 miles. It is complained that the number of ambulances is insufficient; at present there are six. In future persons of opposite sexes are not to be carried in the same ambulance.

Obituary.

JOHN BUCKLEY BRADBURY, M.D., F.R.C.P.,

DOWNING PROFESSOR OF MEDICINE, CAMBRIDGE.

THE death took place at Cambridge on Wednesday, June 4th, of the veteran Downing professor of medicine who was personally known to three generations of Cambridge medical students.

John Buckley Bradbury was a Yorkshireman, who received his education at King's College, London, whence he entered Gonville and Caius College, Cambridge. But while an undergraduate there he migrated to Downing where he obtained a science scholarship, and was eventually placed in the first class in the Natural Science Tripos in 1864. He completed his medical curriculum, and spent the whole of his academic and professional life in Cambridge. Over 60 years ago he was elected physician to Addenbrooke's Hospital, and for more than 30 years he superintended the medical training of students at Downing, while at Caius he was a lecturer on subjects ancillary to medicine. He was appointed Downing professor of medicine in 1894 on the resignation of the late Dr. P. W. Latham, and was by far the oldest man in the University of Cambridge to hold professorial rank. He was also the senior Fellow of the Royal College of Physicians of London where he became a Fellow in 1874, and served on the Council; he delivered the Bradshaw lecture in 1895 on the pharmacology of the vasodilators, and the Croonian lectures in 1899 on hypnotics. These lectures were the foundation of a volume, published shortly afterwards, on the treatment of sleep and sleeplessness, a subject which he made particularly his own. He acted as an examiner in medicine both at Oxford and Cambridge, and at his own University as an examiner in the Natural Science Tripos. He was one of the best known inhabitants of the city, and was devoted to the interests of Addenbrooke's Hospital to which institution he was physician for 50 years—viz., from 1869 to 1919, when he became consultant. He gave for many years clinical demonstrations in the hospital, while he lectured in his official capacity mainly on therapeutics.

Prof. Bradbury was twice married, first to Sarah, daughter of Mr. James Openshaw, and secondly to Jane, daughter of the Rev. R. Gwatkin.

HARRY COOPER PATTIN, M.D.CAMB., D.P.H.,

LATE MEDICAL OFFICER OF HEALTH, NORWICH.

WE regret to record the death of Dr. Cooper Pattin, lately medical officer of health for the city of Norwich and an ex-president of the Society of Medical Officers of Health, which occurred at Torquay on May 30th.

Harry Cooper Pattin received his medical education at Jesus College, Cambridge, and St. Thomas's Hospital, and graduated in medicine at Cambridge in 1890, having taking the double diplomas of the English Conjoint Board a year previously. His whole professional life was spent in Norwich, and for 33 years he had charge of the public health of the city, where his scientific qualifications and his great social gifts were equally recognised. Norwich is a city mediæval in history and in much of its architecture, and modern in its developments and amenities, so that a man who could hold a public position for so long a period, while secure in the approval and support of official authority and popular esteem, may be said to have proved himself a practical success. Cooper Pattin was a great medical officer of health. The structural transformations in the old yards and courts, and the institution of special hospitals, which were brought about by the town council of Norwich and its health committee by Cooper Pattin's organisation, were reflected in remarkable improvements in the health of the city, but they could not come into being without much interference with vested interests,

and it required a man of his energy and integrity to make the reforms acceptable. When he retired from office four years ago he was able to quote figures showing remarkable improvements in death-rate and mortality and to hand on a successful health department which had practically been created by himself.

In private life Cooper Pattin was a man of high culture, a good judge of music and painting, a versatile and sometimes brilliant writer, a witty public speaker, and throughout his life a great traveller.

JOSEPH BIRT, M.R.C.S. ENG., L.R.C.P. EDIN.,

ANÆSTHETIST TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.

ON May 20th last Dr. Birt, the well-known anæsthetist died, at the age of 67, and his death has been the occasion of our receiving an extraordinary testimonial to his character and worth from his intimate fellow workers.

Joseph Birt was educated at Brighton College, intending to become an engineer, but he entered the medical profession at the wish of his mother and joined the medical school at St. George's Hospital, whence he qualified as M.R.C.S. Eng. in 1886. He later acquired the L.R.C.P. Edin. in 1887 and for a time worked at the Sussex County Hospital. He then established himself in general practice at Uckfield, where he quickly earned the confidence and esteem of a large range of patients, rich and poor alike. He himself attributed to the late Mr. Pickering Pick, who had perceived his professional qualities and ability, the encouragement necessary to enter medical practice in London, and ten years later he established himself in the neighbourhood of St. George's Hospital, became medical officer to the Royal Pimlico Dispensary, and soon gathered round him an extensive practice to whom his personality made a particular appeal.

We owe to Mr. Tyrrell Gray, one of Birt's colleagues at Great Ormond-street, the following account of how this successful general practitioner, already in middle age, developed into a fine exponent of a difficult specialty. "In his search for some field of usefulness to his country during the war," says Mr. Gray, "Joseph Birt, with rare insight, decided that, at his age, anæsthetics offered him the best opportunity to help. His genius in this specialty was so quickly recognised that he was not only appointed anæsthetist to seven hospitals, but was unofficially coöpted to numerous hospitals to deputise for absentees in emergency. As a result his services were everywhere available both day and night, for refusal never occurred to him, and there is no doubt that his unfailing and willing response to every request for his services (both during the war and subsequently) was responsible for the long and intermittent illness which ultimately led to his death. But it was at Great Ormond-street that everyone realised his extraordinary flair for anæsthetising children and babies. There his colleagues quickly appreciated that study, knowledge, and experience could not alone be responsible for that outstanding command of a child's confidence which he invariably displayed. His gentle and affectionate disposition, together with the innate love of and compassion for anything young (especially in suffering)—these were the qualities which inspired the trust and affection of all children with whom he came in contact; and these were essentially the qualities which won him his special niche at Great Ormond-street. In the profession he will be remembered for his pioneer work in anæsthetising children—particularly for the standardisation of gas and oxygen anæsthesia as the method of choice for Rammstedt's operation. Living with his sister in a contented simplicity, he will be remembered by his colleagues as the embodiment of the dignified courtesy of a past age; for his love of everything young and beautiful; for a sense of humour which never hurt any feelings; and for his devotion to Great Ormond-street Hospital, where he could usually be found on Sunday morning playing with the children. In his daily life he impoverished himself by his indiscriminate generosity though this never occasioned him any regrets—indeed, he was not conscious of it. One or other of these characteristics is reflected in all of the numerous letters written by patients and friends. To quote from three of them: In one: 'Such a personality can never die'; in another: 'He must be somewhere on ahead, waving an encouraging hand'; or again: 'I think he knew more of all our troubles than anyone.'"

We have received from the surgical staff and the senior anæsthetist at the Children's Hospital individual letters setting out the reasons for the esteem with which they regarded Joseph Birt, to whom they one and all attribute the personality which is brought before us by Mr. Tyrrell Gray. The affection which this good man inspired among all he came in contact with was truly remarkable.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

WHITSUNTIDE ADJOURNMENT.

ON Wednesday, June 4th, the House of Lords adjourned for the Whitsuntide recess until Tuesday, June 17th. The House of Commons adjourned on Friday, June 6th, until the same date.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 4TH.

Tuberculosis (Calmette Treatment).

Mr. FREEMAN asked the Minister of Health whether the Calmette prophylactic treatment in regard to tuberculosis which had been followed by the death of 16 infants in Lübeck, Germany, was being advocated or employed in this country with the permission or under the instructions of the Ministry of Health.—Mr. GREENWOOD replied: The answer is in the negative. I may, however, add that the Medical Research Council has been engaged since 1925 in investigating the statistical and bacteriological evidence relating to this treatment and I am kept informed of their researches. I am informed that two representatives of the Medical Research Council have gone to Germany to obtain further information concerning the deaths at Lübeck.

Psychotherapeutic Treatment.

Mr. MANDER asked the Minister of Health the number of beds available in this country for cases receiving psychotherapeutic treatment.—Mr. GREENWOOD replied: Psychotherapeutic treatment is available in the normal course at many institutions under the jurisdiction of the Board of Control for such patients as are likely in the opinion of the medical staff to benefit from it. But beds are not specially set aside for such cases in these institutions.

Insanitary Conditions in London Boroughs.

Mr. GOULD asked the Home Secretary whether he had now received any report respecting his investigations in certain London boroughs arising out of the report prepared by Mr. A. D. Denning; and what steps he proposed to take regarding it.—Mr. CLYNES replied: I have now received a report which covers 57 factories and workshops, including all classes and sizes of works, and gives detailed particulars as to the actual conditions. Its general effect is to confirm the opinion previously expressed that Mr. Denning's report gives a very exaggerated account. While poor or bad conditions were found in some half-dozen cases, about one-half of the whole number are definitely reported as good, and the remainder reached on the whole a satisfactory standard. Action has already been or is being taken to bring the conditions in every case into conformity with the Act, and I propose to call for a further report in due course as to the results of this action. I also propose to communicate a copy of the report to the joint committee of the industry for whom Mr. Denning's report was prepared, and shall be glad to consider any observations they may wish to make.

Extensions to East Ham Isolation Hospital.

Sir ASSHETON POWNALL asked the Minister of Health whether he had recently sanctioned a loan to the East Ham town council for extensions to the local isolation hospital;

and, if so, what was the amount sanctioned.—Mr. GREENWOOD replied: I sanctioned on May 19th loans amounting to £40,663 to the East Ham town council for extensions to their isolation hospital.

Grading of Milk.

Dr. VERNON DAVIES asked the Minister of Health if his attention had been drawn to the recommendation of the Council of Agriculture for England that the grades of new milk recognised under the Milk (Special Designations) Order, 1923, should be altered—viz., that Certified should be altered to extra special, Grade A (T.T.) to special, and Grade A to standard; and, seeing that the standard milk for this country would thus be the lowest grade milk, that it was not produced from tuberculin tested cows, and that the new designations were not self-explanatory to the consumer, what action, if any, he proposed to take with regard to this recommendation.—Mr. GREENWOOD replied: I have received a copy of the report embodying the recommendation to which the hon. Member refers. I will consider the recommendation as well as the hon. Member's criticism, but I cannot contemplate the introduction of legislation on this subject in the immediate future.

Ultra-violet Ray Treatment.

Viscount ELMLEY asked the Minister of Health whether there was any provision made for the treatment of National Health Insurance patients by means of ultra-violet rays; and, if so, by whom the cost was borne.—Mr. GREENWOOD replied: Any question whether in a particular case this form of treatment is within the scope of medical benefit has to be decided in accordance with Article 43 of the Medical Benefit Regulations, and the method of payment depends upon the decision so arrived at.

Smoke Abatement By-laws in London.

Mr. D. G. SOMERVILLE asked the Minister of Health which authorities in the London area had made by-laws under the Smoke Abatement Act, 1926.—Mr. GREENWOOD replied: Seventeen local authorities in the Greater London area have made by-laws under this Act. The following are their names: Town Councils of Acton, Croydon, Kingston-upon-Thames, Leyton, and Richmond (Surrey); Urban District Councils of Brentford and Chiswick, Finchley, Hampton, Hayes, Heston and Isleworth, The Maldens and Coombe, Mitcham, Surbiton, Wembley, and Willesden; Rural District Councils of Epsom and Hendon.

Certification of a Mental Patient.

Mr. GOULD asked the Minister of Health if he was aware that a lady, M. H., was placed in Camberwell House on the petition of her husband in December, 1903; that this lady was discharged in August, 1929, but was debarred from taking legal action against the doctors who certified her, owing to the Statute of Limitations, which required such action to be taken within six years of certification; and whether he would introduce legislation to prevent persons in such cases being deprived of redress on such grounds.—Mr. GREENWOOD replied: I cannot properly comment upon an individual case, but I understand that the effect of a decision in the House of Lords is as stated by my hon. friend. I cannot, however, undertake at present to introduce legislation on the point.

Exchequer Grants to Voluntary Societies.

Mr. DAY asked the Minister of Health the total amount of Exchequer grants of all kinds paid to voluntary societies in England and Wales to maternity and child welfare, welfare of the blind, and tuberculosis for the 12 months ended to the last convenient date.—Mr. GREENWOOD replied: The grants paid to voluntary societies in England and Wales in respect of the services mentioned during the year ended March 31st, 1930, were as follows: Maternity and child welfare (including grants for the training of midwives and health visitors), £264,354; welfare of the blind, £124,007; treatment of tuberculosis (paid to the Welsh National Memorial Association), £112,196.

Factory Inspectors and Cancer Research.

Mr. PHILIP OLIVER asked the Home Secretary whether, and to what extent, the medical inspectorate of the factory department had been able to assist in the investigation at present being carried out by the London Cancer Hospital into the incidence of the disease of cancer of the bladder among workers in aniline factories; and whether and to what extent the Registrar-General had been able to supply the statistical information required for the investigation.—Mr. CLYNES replied: The precise manner in which the Factory Department could best assist in this investigation has been explored, and it was decided that they should coöperate more particularly in tracing, so far as is necessary and practicable, the exact occupations of persons who have died of cancer of the bladder. For this purpose the Registrar-General is extracting information from his records, and the first Return is, I understand, practically ready. As I have warned the hon. Member, the research is a complex and difficult one, and I am afraid it is impossible to forecast when we may expect any conclusive results.

Diagnosis of Silicosis.

Mr. HOPKIN asked the Home Secretary if he was aware that the late Thomas Davies, of Gorslas, Carmarthenshire, was certified in June, 1929, by his family doctor to be suffering from silicosis and was a few weeks later declared by the medical referee not to be suffering from silicosis; that in April, 1930, the post-mortem examination showed that he died from silicosis; and that at the inquest the verdict was returned in accordance with the medical evidence—viz., that Thomas Davies died from silicosis; and if he was now prepared to change Order 975 so as to obviate the effects of such mistakes to the miner or his dependants.—Mr. CLYNES replied: I have received reports on this case, and the facts appear to be as stated in the question. I am advised that, owing to the presence of the condition known as anthracosis, the diagnosis of the disease in this case would, during the workman's lifetime, be one of peculiar difficulty, and the case affords a very good illustration of the need for improved medical arrangements by the setting up of an expert Medical Board for the whole country as recommended by the Departmental Committee. I am seeking to obtain the necessary powers for this purpose in the Workmen's Compensation (Silicosis) Bill which is now before this House, and which I hope will be proceeded with immediately after the Recess, and I can assure my hon. friend that as soon as the Bill becomes law steps will be taken to establish the new medical organisation with the least possible delay.

Experiments on Living Animals.

Mr. FREEMAN asked the Home Secretary whether he was aware that experiments upon living animals had been conducted at the physiological laboratory, Cambridge, by Mr. B. H. C. Matthews, the purpose of which was to measure pain; what species of animals were used in this investigation; and under what certificates were the experiments conducted.—Mr. CLYNES replied: I have made inquiry into the circumstances. The purpose of the experiments was not to measure pain, but to measure electrical impulses, and they were not performed on living animals. No licence is necessary for this, and Mr. Matthews does not hold one.

FRIDAY, JUNE 6TH.

Pensions and Conditions of R.A.M.C. Officers.

Lieut.-Colonel FREMANTLE asked the Secretary of State for War (1) if he was aware that whereas combatant officers' pensions had increased in value since the war, the pensions of officers of the R.A.M.C. had decreased; that the pension earned by a major, R.A.M.C., at 20 years was now £368 per annum, which, having regard to the increases in income-tax and the cost of living was worth little more than half the pre-war rate of £365 per annum, fixed in the reorganisation of the Army Medical Service in 1902; and if it was proposed to reduce or increase this pension this year; (2) if he could give any undertaking that the maximum pension for a lieutenant-colonel of the R.A.M.C., attainable after 28 years' service, would not be further reduced from its present amount of £558; and (3) if he was aware that the officer strength of the R.A.M.C. was inadequate for requirements, resulting in the employment of civilian practitioners, and the re-employment of retired officers, all of whom did home service only, and that the average period of foreign service undertaken by regular officers, R.A.M.C., had increased in consequence; and whether, seeing that this prospect was bound adversely to affect the recruitment of young medical officers to the service, he would consider how these conditions of service could be improved.—Mr. T. SHAW replied: I have under my personal consideration at the present time the whole question of the supply of officers for the R.A.M.C. As regards the detailed information for which the hon. and gallant Member asks, last year special steps were taken to render conditions of service in the Corps more attractive. Certain concessions have been made regarding the counting, for purposes of promotion, increase of pay and pension, by officers appointed to permanent commissions in the Corps, of temporary service in the Corps, or of time spent in a civil hospital appointment. The Army Council are also in touch with civil hospitals at the present time to see whether arrangements can be made by which R.A.M.C. officers may be enabled to secure experience in civil hospital appointments. As regards retired pay, the retired pay of majors and lieutenant-colonels of the R.A.M.C. in receipt of post-war scales is subject, like that of other officers, to revision next year in the light of the cost of living figure. I cannot anticipate what the result of that revision will be.

Vaccination of Small-Pox Contacts.

Mr. GROVES asked the Minister of Health whether he was aware that pyæmia, referred to in the death certificate of the infant which recently died from small-pox and pyæmia at the Joyce Green Hospital within five days after being vaccinated, was attributable to the operation of vaccination; and whether, in view of the fact that in this case and other similar cases there was strong ground for believing that vaccination after small-pox had commenced to incubate merely added to the patient's troubles, he would direct his medical officials to discourage as far as possible the vaccination of small-pox contacts.—Mr. GREENWOOD replied: If, as I assume, my hon. friend is referring to the case of Frank George Young, I am informed that death took place 25 days, and not 5 days, after the infant was vaccinated. I have caused inquiries to be made into the case, and am advised that the pyæmia referred to in the death certificate supervened on the small-pox, and that the death is not in any way attributable to the vaccination. As regards the second part of the question, I would refer my hon. friend to the answer [1] given to him on this subject on April 3rd.

Medical News.

UNIVERSITY OF LONDON.—At recent examinations the following candidates were successful:—

THIRD EXAMINATION FOR M.B., B.S.

With Honours.—P. B. Ascroft (*d*), Middlesex Hosp.; Margaret E. Cook (*b*), L.S.M.W.; K. M. Robertson (*a*), St. Thomas's Hosp.; and Ursula Shelley (*c, d*) *University Medal*, L.S.M.W.

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*c*) Distinguished in Forensic Medicine. (*d*) Distinguished in Surgery.

Pass.—E. F. D. Baker, D. A. Beattie, and A. C. H. Bell, St. Bart.'s Hosp.; J. R. Buchanan and C. W. F. Burnett, Univ. Coll. Hosp.; E. A. Butterworth, St. Mary's Hosp.; Charlotte A. G. Conway, L.S.M.W.; E. T. Conybeare, Guy's Hosp.; W. W. Craner, London Hosp.; H. B. A. R. Densham, Guy's Hosp.; D. C. L. Derry, St. Thomas's Hosp.; P. C. C. de Silva, King's Coll. Hosp.; F. B. P. Evans, Univ. of Birmingham; Rees Evans, Univ. Coll. Hosp.; S. N. Evans, Guy's Hosp.; R. H. Franklin, St. Thomas's Hosp.; Ruth C. Galletly, L.S.M.W.; E. M. Goitein, Univ. Coll. Hosp.; C. S. Gross, Guy's Hosp.; Ernest Grundy, Univ. of Leeds; A. G. Harsant, London Hosp.; J. C. Hatrick, Univ. Coll. Hosp.; J. C. Heather, Guy's Hosp.; H. B. Hodson, St. Thomas's Hosp.; A. S. Hoseason, St. George's Hosp.; C. B. Huss, St. Bart.'s Hosp.; Phyllis Hutchinson, King's Coll. Hosp.; John Ives, St. Mary's Hosp.; A. N. Jones, Guy's Hosp.; O. V. Lloyd-Davies, Middlesex Hosp.; Laura H. Macfarlane, L.S.M.W.; H. G. McGregor and B. R. Medlycott, Guy's Hosp.; T. W. Morgan, St. Thomas's Hosp.; C. L. Oakley, Univ. Coll. Hosp.; C. M. Ockwell, Guy's Hosp.; Ralph Oliver, Univ. Coll. Hosp.; R. A. H. Pearce, Middlesex Hosp.; G. F. Peters, Guy's Hosp.; R. K. Price, St. Bart.'s Hosp.; Ruth Pumphrey, Univ. Coll. Hosp.; Barkat Ram, St. Thomas's Hosp.; Henry Richards, Guy's Hosp.; Margaret P. Roseveare, L.S.M.W.; T. N. Rudd, London Hosp.; J. C. Saldanha and R. M. Sargent, Univ. Coll. Hosp.; J. G. Scadding, Middlesex Hosp.; J. M. Scott, St. Bart.'s Hosp.; M. D. Sheppard, Univ. Coll. Hosp.; L. A. H. Snowball, King's Coll. Hosp.; T. T. Stamm, Guy's Hosp.; Brian Stanley, Univ. Coll. Hosp.; Sybil M. A. Stanley, L.S.M.W.; W. D. Steel, Univ. of Birmingham; J. H. Watkin, St. Bart.'s Hosp.; Margaret M. White, L.S.M.W.; G. P. B. Whitwell, Guy's Hosp.; Joyce M. Wigram, L.S.M.W.; R. N. Wilcox, St. Thomas's Hosp.; E. G. Wilkins, Middlesex Hosp.; and Margaret D. Wright, Univ. Coll. Hosp.

The following candidates passed in the undermentioned parts of the examination:—

Group I.—Frederick Back, St. Thomas's Hosp. and London Hosp.; E. F. Barnardo, London Hosp.; F. G. L. Barnes, St. Bart.'s Hosp.; A. C. Byles, St. Mary's Hosp.; W. H. P. Cant, Univ. of Birmingham; Rosa E. Chamings, L.S.M.W.; E. E. Claxton, St. Bart.'s Hosp.; H. J. Croot, Guy's Hosp.; C. E. Dolman, St. Mary's Hosp.; Beryl M. Furlong, Mabel E. Grace, and Honor E. C. Harvey, L.S.M.W.; H. B. Jackson, Middlesex Hosp.; Victoria H. King, L.S.M.W.; H. J. Knight, St. Mary's Hosp.; Nellie I. Lanckenan, Univ. Coll. Hosp.; I. W. Lazarus, London Hosp.; Annie M. McGrath, Westminster Hosp.; Joyce MacInnes, L.S.M.W.; Eileen M. Massey, King's Coll. Hosp.; Elizabeth T. Mess and Ruth Milne, L.S.M.W.; R. S. Risk, St. Bart.'s Hosp.; J. B. Robinson, Guy's Hosp.; Douglas Stanley Jones, St. Bart.'s Hosp.; H. H. Steadman, Guy's Hosp.; Muriel H. Steven, King's Coll. Hosp.; Olive C. Watkin, Charing Cross Hosp.; and T. H. Wilson, St. Thomas's Hosp.

Group II.—W. L. M. Bigby, Guy's Hosp.; Anthony Caplan, St. Bart.'s Hosp.; A. G. Carmichael, Middlesex Hosp.; J. B. George, St. Thomas's Hosp.; Bryneilen Griffiths, Univ. Coll., Cardiff, and Charing Cross Hosp.; Eric Gwynne-Evans, Univ. Coll. Hosp.; Mary W. Hamlyn, L.S.M.W.; P. Y. Hicks, St. Thomas's Hosp.; R. E. Holmes, London Hosp.; S. W. Holmes, St. Mary's Hosp.; Mohabeer, Luckeenarain, Univ. Coll. Hosp.; Mary L. Marsh, Charing Cross Hosp.; W. C. W. Nixon, St. Mary's Hosp.; A. P. M. Page, St. Bart.'s Hosp.; Oliver Plowright, Guy's Hosp.; D. C. Price, St. Bart.'s Hosp.; J. D. Ritchie, St. George's Hosp.; E. B. Rogers, Guy's Hosp.; Violet R. Sharp, L.S.M.W.; and T. S. Stone, London Hosp.

L.S.M.W. = London School of Medicine for Women.

At a meeting of the Senate on May 7th it was resolved to institute a university readership in biochemistry tenable at the London School of Hygiene and Tropical Medicine.

UNIVERSITY OF OXFORD.—Sir William Morris has offered to vest the Radcliffe Observatory site and buildings in the hands of a body of trustees, to be used for the benefit of the Radcliffe Infirmary and the Medical School of the University.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—On June 2nd Dr. Robert Grieve Hutchison and Dr. James Sharpe were admitted Fellows of Faculty.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN—Mr. A. R. Melhuish, of London, has been elected president of this society.

MEDICO-LEGAL SOCIETY.—At a meeting of this society at 11, Chandos-street, London, W., on June 26th, Prof. J. S. Haldane, F.R.S., will read a paper on Carbon Monoxide Poisoning.

BIOCHEMICAL SOCIETY.—A meeting of this society is being held on Saturday, June 14th, in the department of biochemistry of the University of Oxford.

UNIVERSITY OF LIVERPOOL.—Dr. Walter Ramsden has resigned from the Johnston Chair of Biochemistry. His resignation will take effect at the end of the year.

Colonel Alfred William Sheen, C.B.E., and Lieut.-Colonel Sir Ewen John Maclean have been appointed Deputy Lieutenants for the county of Glamorgan.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH.—A new wing of the nurses' home at this St. John's Wood hospital was opened last week. It is a memorial to the late Hon. Sir Charles Russell, who was chairman of the institution from 1919 to 1928. It has cost £15,000.

PADDINGTON MEDICAL SOCIETY.—A new regional medical society was inaugurated at a meeting held on June 10th at Paddington Town Hall. Dr. Howard Stratford took the chair, representatives were present from central medical associations, and apologies for absence were received from Dr. Christine Murrell and Dr. H. B. Morgan, M.P. for the borough. Dr. Julius Cohen, to whose initiative the society owes its origin, briefly outlined its aim which is to provide opportunity for the practitioners in the area to meet each other, to meet consultants away from the bedside, and to get to know the public officers of the health department and its associated clinics. It was intended not merely to register pious opinions but to discuss and agree upon medico-political questions of the day such as State medical service, contributory schemes, and the like. A constitution for the society was then adopted. Membership is open to all medical practitioners residing or practising in Paddington; six of the seven office-bearers must be actively engaged in medical practice in the borough itself. Dr. G. Swietochowski was then unanimously elected president, Dr. A. Baldie vice-president, and Dr. Cohen hon. secretary and treasurer; after a card vote the four additional committee members chosen were Dr. W. G. Bendle, Dr. G. E. Oates (medical officer of health), Dr. R. G. Murray, and Dr. Isabella Stewart. Dr. Swietochowski, having been inducted to the presidential chair, outlined the future work of the society, making it clear that there would be no attempt to run counter to any existing group. The growing tendency within the medical profession, for better or worse, to become a branch of the civil service, made it essential, he said, to preserve a strong local organisation to act as middle-man between the central authority and the individual practitioner. Paddington doctors would, he hoped, use the society precisely as the Romans treated their forum. At each meeting a 20 minutes paper would be read, and discussed; they would then pass to debate on current medico-political matters. At the close of the meeting most of those present enrolled as members. Meetings are to be held at 9 P.M. on the second Tuesday in the month at the Great Western Hotel, Paddington.

[1] See THE LANCET, April 12th, p. 837.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2 2 0
	Six Months	1 1 0
	Three Months	0 10 6
ABROAD	One Year	2 10 0
	Six Months	1 5 0
	Three Months	0 12 6

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, June 17th.—5.30 P.M., Ballot for Election to the Fellowship.

THURSDAY.—5 P.M., DERMATOLOGY (Cases at 4 P.M.). Dr. W. N. Goldsmith: 1. ? Congenital Ichthyosiform Erythroderma in Mother and Son. 2. Case of Juvenile Spontaneous Bullosis. Mr. Stanford Cade (introduced by Dr. S. E. Dore): 3. Demonstration on Carcinoma of the Skin Treated by Radium. Dr. H. W. Barber: 4. Ichthyosiform Nævus. 5. Psoriasis. Dr. G. B. Dowling: 6. Urticaria Pigmentosa of Infantile Type Persisting into Adult Life. 7 and 8. Two Cases of Ulerythema Ophryogenes (Unna). 9. Angioma Serpiginosum. Dr. Knowsley Sibley: 10. Case for Diagnosis. Dr. S. E. Dore (for Dr. R. Oddie): 11. Case of Urticaria Pigmentosa. Other cases will be shown.

FRIDAY.—10 A.M., LARYNGOLOGY: Summer Meeting. Papers will be read by Dr. Douglas Crow, Dr. A. Brown Kelly, Dr. Dan McKenzie, Mr. W. S. Thacker Neville, Mr. E. Watson-Williams, and others. 5 P.M., Clinical Meeting. Cases will be shown by Dr. Norman Patterson, Dr. H. Bell Tawse, Mr. Mortimer Woolf, Dr. Dan McKenzie, Dr. E. A. Peters, Mr. J. F. O'Malley, Mr. Michael Vlasto, and others. The Annual Dinner of the Section with the Section of Otology will be held at the Langham Hotel, Portland-place, London, W., at 7.30 P.M. for 7.45 P.M. 8 P.M., OBSTETRICS AND GYNÆCOLOGY. Mr. A. J. Wrigley: Puerperal Infection by the Pathogenic Anaerobic Bacteria. Short Communications: Dr. H. K. Griffiths: 1. A Lithopædion. 2. A Short Account of a Pregnancy in one Horn of a Bicornate Uterus. Pathological Specimens: Mr. Eardley Holland: 1. A Case of Secondary Melanotic Sarcoma of the Placenta with Transmission of the Growth to the Fœtus; with specimens and drawings. 2. Six specimens of Recent Interesting Cases of Fibromyoma of the Uterus. Dr. J. Bamforth: 3. An Unusual Tumour of the Uterus. 4. Early Carcinoma of the Endometrium. 5. Endometrioma of the Abdominal Wall. Dr. Ivens Knowles: 6. Recurrent Melanotic Sarcoma of the Clitoris. Other specimens will be shown.

SATURDAY.—DISEASE IN CHILDREN: Annual Provincial Meeting at Norwich.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

THURSDAY, June 19th.—8.15 P.M., General Meeting; preceded by a Demonstration at 7.45 P.M. to illustrate a paper by Dr. N. Hamilton Fairley: Sprue—its Applied Pathology, Biochemistry, and Treatment.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

TUESDAY, June 17th.—8.15 P.M., Professor de Quervain (Berne): Cretinism and its Relation to Thyroid Physiology. (Cavendish Lecture.) Reception at 7.45 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.

TUESDAY, June 17th.—5 P.M., Sir Charles Martin: The Thermal Adjustment of Man to External Conditions, more particularly those pertaining to Warm Climates. (2nd Croonian Lecture.)

THURSDAY.—5 P.M., Sir Charles Martin. (Last Croonian Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, June 16th to SATURDAY, June 21st.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W., Special M.R.C.P. Lectures at 8.30 P.M., as follows: Tues., Dr. O. L. V. De Wesselow, Hypotension and Renal Disease; Fri., Dr. O. L. V. De Wesselow: Diabetic and other Acidoses. BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.: Tues., 2 P.M., X Ray Demonstration by Dr. E. U. Williams. No fee. EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.: Wed., 11 A.M., Demonstration on Ear, Nose, and Throat Cases, by Mr. G. H. Howells. No fee. BLACKFRIARS SKIN HOSPITAL, Blackfriars-road, S.E. Afternoon Course. CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W.: Mornings and/or Afternoons. PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.: Intensive Course in Medicine and Surgery. Further particulars from the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, June 16th.—2.30 to 5 P.M.: Medical, Surgical, and Gynæcological Clinics. Operations. 4.30 to 5.30 P.M., Mr. H. W. Carson: Abdominal Pain in Children.

TUESDAY.—2.30 to 5 P.M., Medical, Surgical, Ear, Nose and Throat Clinics. Operations. 4.30 to 5.30 P.M., Dr. J. B. Alexander: Various Forms of Treatment of Pulmonary Tuberculosis.

WEDNESDAY.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, Throat, and Ear clinics. Operations. 4.30 to 5.30 P.M., Mr. Aubrey Goodwin: The Use of Pessaries.

FRIDAY.—10.30 A.M.: Ear, Nose, and Throat Clinics. 2.30 to 5 P.M., Medical, Surgical, and Children's Diseases Clinics. Operations. 4.30 to 5.30 P.M., Mr. E. Gillespie: Surgery of the Stomach.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, June 16th.—12 noon, Dr. Greenfield: Cerebro-spinal Fluid. 2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Kinnier Wilson: Varieties of Peripheral Neuritis.

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Grainger Stewart: Spinal Tumours and Compression Paraplegia.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Lesions of the Cerebellum.

FRIDAY.—12 noon, Dr. Purdon Martin: Anatomy and Physiology of the Nervous System. 2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Walshe: Disorders of the Motor System.

Appointments.

CLARK, J., M.D., Ch.B. Aberd., D.P.H., has been appointed Deputy Medical Officer of Health, Sheffield.

PATEY, D. H., M.S., M.B. Lond., F.R.C.S. Eng., Assistant Surgeon to the Middlesex Hospital.

ROBERTSON, E. M., M.B., Ch.B. Glasg., D.P.H., Assistant Medical Officer of Health for Hyde.

TAIT, A., M.B., Ch.B. Edin., Certifying Surgeon under the Factory and Workshop Acts for the Markinch District of the County of Fife.

WALTON, W. S., M.B., B.S. Durh., D.P.H., Assistant Medical Officer of Health for the City and Port of Plymouth.

Vacancies.

For further information refer to the advertisement columns.

Bath, Royal United Hospital. H.P. £120.

Birkenhead County Borough.—Asst. M.O.H. and Bacteriologist. £750.

Birmingham, City of.—1st Asst. M.O. £600.

Birmingham, Midland Hospital, Easy-row.—H.S. £150.

Blackburn Royal Infirmary.—Res. H.P. £175. Also 4th H.S. £150.

Brighton, New Sussex Hospital for Women and Children.—Hon. Asst. Ophth. S. Also H.P. £50.

Brighton, Royal Alexandra Hospital for Sick Children.—H.P. £100.

Cancer Hospital, Fulham-road, S.W.—Pathologist. £850.

Cardiff, Cefn Mably Hospital, Michaelstone-y-Vedw, near Newport.—Asst. Res. M.O. £250.

Cardiff Royal Infirmary.—Res. Reg. £100. Cas. Surg. O., and H.S. to Ophth. Dept. Each at rate of £75.

Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow.—Asst. M.O. £275–£300.

Chesterfield and North Derbyshire Royal Hospital.—Cas. O. At rate of £200.

Colchester, Royal Eastern Counties' Institution for Mentally Defective.—Clin. Research Worker. £600.

Countess of Dufferin's Fund, Women's Medical Service for India.—Two Medical Women. 550 and 750 rupees per mensem.

Coventry and Warwickshire Hospital.—Res. Asst. H.S. £125.

Derby, Derbyshire Royal Infirmary.—Asst. H.S., and Cas. O. Also Ophth. H.S., and Res. Anæsthetist. Each £150.

Doncaster Royal Infirmary.—Hon. Phys. and Pathologist. £250.

East London Hospital for Children, Shadwell, E.—Dermatologist.

Gloucester, Gloucestershire Royal Infirmary.—2nd H.S. At rate of £100.

Golden-square Throat, Nose, and Ear Hospital, W.—H.S. £100.

Great Yarmouth General Hospital.—H.S. £150.

Halifax Royal Infirmary.—3rd H.S. At rate of £125.

Harrow Hospital, Harrow-on-the-Hill.—Surgeon.

Hertford County Hospital.—H.P. At rate of £150.

Hospital for Sick Children, Great Ormond-street, W.C.—Part-time Jun. Cas. O. At rate of £150.

Hull Royal Infirmary.—H.S. At rate of £150.

Hyde, Borough of.—M.O., &c. £800.

Indian Medical Service.—Commissions.

Ipswich, East Suffolk and Ipswich Hospital.—H.P. £120.

Islington Dispensary, 303, Upper-street, N.—Asst. Res. M.O. £220.

Leamington Spa, Warneford General Hospital.—Res. H.S. £165.

Lincoln County Hospital.—Jun H.S. at rate of £150.

Liverpool, Royal Southern Hospital.—H.P. H.S. Also M.O. to Spec. Depts. Each at rate of £60.

L.C.C. Mental Hospital Service.—8th Asst. M.O. £445.

London Female Lock Hospital, 283, Harrow-road, W.—H.S. £150.

London Panel Committee, 17, Russell-square, W.C.—Organising and Asst. Med. Secy. £600.

London University.—Graham Scholarship in Pathology. £300. Also External Examinerships.

Manchester, Ancoats Hospital.—H.S. At rate of £100. Also Clin. Asst for Ear, Nose and Throat Dept. 10*s.* 6*d.* per clinic.

Manchester, Baguley Sanatorium.—Asst. M.O. £350.

Manchester Ear Hospital, Grosvenor-square, All Saints.—Non-Res. H.S. At rate of £150.

Manchester Royal Infirmary.—Asst. Surg. O., and Asst. M.O. Each £35.
Manor House Hospital, Golders Green.—Jun. Med. Officer. £300.
Margate and District New General Hospital.—Res. M.O. £125.
Mount Vernon Hospital, Northwood, Middlesex.—Gynæcologist.
Newark General Hospital.—Res. H.S. At rate of £150.
Northampton General Hospital.—Asst. H.S. At rate of £150.
Norwich, Norfolk and Norwich Hospital.—H.S. £120.
Paisley District Asylum, Riccartsbar.—Clin. Asst. £200.
Portsmouth Royal Hospital.—Cas. O. At rate of £100.
Pretoria Onderstepoort Veterinary Research Laboratory.—Three Research Fellowships. £800–£1000.
Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Res. M.O. £200.
Queen Mary's Hospital for the East End, Stratford, E.—H.P.'s and H.S.'s. Each £120. Also H.P. and Cas. O. £150.
Queen's Hospital for Children, Hackney-road, E.—Res. M.O. At rate of £200. Also Asst. Physician.
Reading, Royal Berkshire Hospital.—H.P. Cas. O. Also Res. Anæsthetist. Each at rate of £150.
Richmond, Surrey, Royal Hospital.—Hon. Asst. Radiologist, Hon. Surg., and Hon. Asst. P. to Out-patients.
Rotherham Hospital.—Sen. H.S. £200. Also H.P. £180.
St. Bartholomew's Hospital, E.C.—Surgeon to Throat Dept. Also Asst. Physician.
St. Helens County Borough.—Asst. M.O.H. £600.
Salford Royal Hospital.—Hon. Asst. S. Also H.P., H.S., and Cas. H.S. Each at rate of £125. Also Anæsthetist. 1 gn per session.
Sheffield Children's Hospital.—3rd Res. M.O. £100.
Sheffield Royal Hospital.—Res. Anæsthetist. At rate of £80.
Sheffield Royal Infirmary.—H.S. £80.
Southwark Hospital, East Dulwich-grove, S.E.—Med. Supt. £1200.
South Shields, Ingham Infirmary.—Sen. and Jun. H.S.'s. £200 and £150 respectively.
Southampton Borough Hospital.—Res. M.O. £275.
Southampton, Royal South Hants and Southampton Hospital.—Sen. H.S. £225. Also Asst. H.S. £180.
Southport General Infirmary.—Jun. H.S. £100.
Surrey County Council.—Asst. M.O. £600.
Swansea County Borough.—Asst. M.O. £600.
Truro, Royal Cornwall Infirmary.—H.S. £170.
University College Hospital, Gower-street, W.C.—Hon. Anæsthetist.
Walsall General Hospital.—Cas. H.S. At rate of £120.
Weir Hospital, Grove-road, Balham, S.W.—Jun. Res. M.O. £150.
West London Hospital, Hammersmith, W.—Res. Asst. Phys. £300.
Weymouth and District Hospital.—H.S. £180.
Wigan Royal Infirmary.—Res. Med. and Surg. O. and Registrar £250.
Willesden General Hospital, N.W.—Clin. Asst. to Surg. Out-patient Dept.
Winchester, Royal Hampshire County Hospital.—Sen. Res. M.O. £200. Also H.P. and H.S. Each £150.
Worcester General Infirmary.—Jun. Res. M.O. £120.

The Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the Districts of the Boston, Holbeach, Sleaford, Spalding, and Spilsby County Courts (Circuit 17). Applications should reach the Private Secretary, Home Office, Whitehall, London, not later than June 28th.

Births, Marriages, and Deaths.

BIRTHS.

CRISP.—On May 30th, at Oakham, Rutland, the wife of G. H. Crisp, B.M., B.Ch., of a daughter.
FEILDEN.—On June 6th, 1930, at 28, The Drive, Hove, the wife of Frederick E. Feilden, F.R.C.S. Edin.—a daughter.
ROPE.—On June 2nd, at Quarry-place, Shrewsbury, the wife of Dr. A. D. Rope, of a daughter.

MARRIAGES.

MACKENZIE—CAVE.—On June 3rd, at St. Andrew's Parish Church, Malahide, Co. Dublin, Kenneth Fitzgerald Mackenzie, M.B., F.R.C.S., to Sylvia Dorothea, only daughter of the Rev. Henry C. Cave, M.A., and Mrs. Cave, of the Rectory, Malahide, Co. Dublin.
ROUTH—SCOT SKIRVING.—On June 7th, at the Parish Church, Cheltenham, Douglas James Lionel Routh, M.R.C.S., L.R.C.P., to Estelle Elisabeth, youngest daughter of Mr. and Mrs. E. Scot Skirving, of Kilchoman, Cheltenham.

DEATHS.

BRADBURY.—On June 4th, at St. Peter's-terrace, Cambridge John Buckley Bradbury, Downing Professor of Medicine.
CANDY.—On June 1st at Frondeg, Stow Hill, Newport, Mon., Thomas Ignatius Candy, M.B., B.Ch., B.A.O., D.M.R.E., aged 38.
GEE.—On June 2nd, at the Royal Northern Hospital, following an operation, Lieut.-Col. Frederick William Gee, I.M.S. retd., C.I.E., M.B., B.Sc., M.R.C.S., of Westmead, Cookham, Berks.
HAMMELL.—On May 30th, at Sydenham, suddenly, Donald H. Hammell, L.D.S., D.D.S., of Wimpole-street, W.
WAKEFIELD.—On June 6th, in France, Robert Clark Wakefield, M.D., late of Mapesbury-road, Brondesbury, aged 67.
WOOLDRIDGE.—On June 6th, at Camberley, Arthur Tylee Wooldridge, M.R.C.S., L.R.C.P., L.S.A.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages and Deaths.

Notes, Comments, and Abstracts.

ECONOMIC ASPECTS OF MEDICINE.

BY LEONARD P. LOCKHART, M.D. CAMB.,
BARRISTER-AT-LAW.

THOSE who have watched the progress of social services since the war must have been greatly struck by Sir Arthur Keith's recent address to the Medical Society of London[1] on the "Inexorability of the Law of Evolution as Manifested in Modern Medicine." While stating nothing that is not already accepted, Sir Arthur presented it to the reader in such a way that in his train of argument he exemplified that very law of evolution upon which he based his thesis. He comes finally to a conclusion, which from such a source cannot fail to prove arresting, that "we cannot escape State control in the long run." Certainly this may be the outcome of the series of events in which we are all now playing a part, but it would be fruitless to argue as to whether or no State control will ultimately prove beneficial to medical science because by the time it comes to fruition it will probably bear as much resemblance to our present conception of State control as the battle of Jutland bore to Trafalgar—a difference not only of degree but of kind. Our present conception of State control is dominated by the idea of an ever-increasing bureaucracy in Whitehall, but it is unlikely that the present system will expand indefinitely. Already it is becoming obvious that over-organisation is a malignant and ultimately fatal disease in any corporate body, so much so that in certain industries there is a tendency to organise small self-contained units in parallel rather than in series—a confederation of self-governing states rather than a centrally controlled empire.

The time factor in civil evolution is important, because it is evident from historical records that mere passage of time is not necessarily synonymous with progress, for in the sphere of civil and social growth the biological law is not by any means valid—violent retrogressions unknown in the animal world result from hasty and ill-considered forward rushes such as in nature never can take place—and it may be that Sir Arthur Keith has placed unwarranted confidence in the evolutionary value of time. Perhaps, after all, disintegration is as likely to be the outcome of our present system as continued integration, but no one would on that score presume to question Sir Arthur Keith's statement that the main feature of the law of evolution is its inexorability. One may, however, question the completeness of the analogy between physical and mental evolution, and there is at least a doubt whether the evolution of medicine and other social services is not liable to disintegrate the spirit of man and, even if such a setback should prove but temporary, the human mind is likely to seek some more trustworthy ladder of ascent once it has recovered its poise. At a time when the British Medical Association is presenting for criticism a policy for a general medical service for the nation, it may not be out of place to recall to the minds of our profession a point which is repeatedly lost sight of, and which has even escaped mention in Sir Arthur Keith's paper—namely, the interdependence of medicine and industry. Neither can exist without the other, and yet the intimate and vital connexion is so frequently lost sight of that disintegration at this very point might very easily prove the undoing of Sir Arthur's hypothesis.

Interdependence of Medicine and Industry.

Dr. Erwin Liek goes so far as to make a statement that Germany lost the Great War because the moral character of the nation had been undermined by the social insurance system. Supposing this statement to be no more than a mere personal opinion, it is at least one held in part by a great number of thoughtful persons in connexion with our own social system, and it follows that social insurance is at once a concomitant of evolutionary progress, and at the same time the harbour of a disintegrating force which is slowly sapping our moral fibre. It is clear that Sir Arthur visualises an idealised form of social service, while Dr. Liek only considers the uses and abuses of the present system, with a distinct bias towards the latter. It is probable that we have not yet learnt how properly to handle the social insurance problem, and that it is not the system which is at the root of the trouble but its faulty application. Misuse is by no means always intentional or negligent; more often than not it springs from a misconception, and it is impossible to avoid the conclusion that our profession as a whole is not adequately informed on the industrial situation as it affects not only the insured person but the nation as a whole. It needs but a little reflection for everyone to

[1] THE LANCET, May 17th, p. 1053.

realise the immense importance of a proper understanding of the inner workings of modern industry. We are without doubt in danger of producing an industrial population which is propped at every turn by social insurance, and unless everything possible is done to discourage excessive dependence on the props we shall find ourselves with a demoralised population and inevitable bankruptcy of the funds. A desire to use the funds as little as possible is essential in all insurance, and benefits should only be drawn on in emergencies, not at regular intervals as a prize for abstention in the interim.

The American view on this matter is illuminating. It is widely held in the United States that wealth is not *in* industry, but that wealth *is* industry, and that every single thing which is given for nothing or in return for inadequate service is in effect so much actual poverty grafted on to the nation. Thus abuse of any system of insurance is wilful robbery of other people's livelihood and high treason against the State.

Abuse of the Insurance Principle.

A common form of abuse is exemplified by the additional benefit for ophthalmic treatment. A patient breaks his or her glasses or desires a newer type of frame, whereupon, withholding information regarding existing appliances, he asks some doctor (any doctor will do) for a certificate to the effect that the condition of his eyes is prejudicial to his health. A patient recently refused a certificate by the writer retorted that she had not "had anything out of the insurance for six years!"

A medical man who exercises his judicial function over certification in this and other matters stands to lose at the hands of disgruntled patients, and in an age of extensive certification for a multitude of purposes it is a matter serious enough to call for some form of protection for the doctor, for the economic pressure is great. If no benefit could be drawn except by the production of a certificate on a form previously obtained by the patient from the approved society or other interested body, and if every doctor who felt it his duty to refuse the certificate was called on to note that fact on the form it would be impossible for any other medical man subsequently approached to reverse that decision in ignorance of the previous refusal, and the spectacle of one medical man set off against another would be avoided.

On the other hand there is often a failure by the doctor to realise to the full the import of certain very innocent looking words when used on certificates. "Fit for light work" often causes a lot of trouble, because the patient knows full well that in modern industry the provision of light duty is, except in rare and isolated cases, next to impossible. There is not enough light work for 2 per cent. of any large staff; the reason being that in heavy industries there is little really light work, and in the big repetitive workshops there is a minimum of really heavy duty. A certificate bearing the words in question often means that a patient considers himself far worse than he really is, because his idea of light work and the doctor's are quite different. Many doctors still think in terms of coal, iron, and steel, and forget the enormous growth of light repetitive processes. Heavy work is being increasingly performed by machinery, and in the coming age of machine-tenders light work and ordinary work are very nearly synonymous terms. The team organisation of mass production prevents much individual laxity in hours for the convalescent employee, so that to-day one is either fit or unfit, and there is a tendency in certification to err on the side of excessive safety. An inside knowledge of local industrial operations is invaluable for arriving at a right decision.

The Off-work Neurosis.

A determined effort by the profession to eliminate from certificates, except in cases of absolute need, the words "nerves, neurasthenia, anæmia, depression, cardiac debility, weak heart, &c.," would go a long way towards reinforcing that aspect of psychotherapy—suggestion—which is invaluable to the convalescent. There is a definite "off-work" neurosis, and it is certain that many patients wait for their doctors to suggest their ability to work, and that symptoms psychological in origin persist until that suggestion comes, but the doctor defers the urge to work because of the continuing symptoms. There is a danger, too, of our encouraging a tendency to introspection among young people when we allow them to become unduly preoccupied over conditions which are in the main environmental, and for which work is the best cure. Our social insurance has saved an immensity of suffering, but in the elimination of suffering may we not lose something of our moral fibre? It is on our shoulders that the responsibility will lie. Too many ailments, from chapped hands to constipation, are ascribed to occupation, and certificates given to this effect, often by certifying surgeons. The result in many cases is that employees lose their jobs because they are too expensive to keep, and the risk of a recurrence too great. Modern industry *is* the nation. We must help it, and not be always hampering it with restrictive charges which ought not to be placed on it. The Workmen's Compensation Act is a great measure of social welfare, but it is a two-edged sword, and many employees have reason to doubt its beneficial action.

When our profession and the courts of law begin to take a wider view of this matter it will be possible to take steps to give better employment to the cripples and the partially disabled. At present restrictions and the threat of legal action make it essential for wise employers to select only the most physically fit. In this way the less fit are left in idleness or in the lower grades of employment, and any chances they might have of raising themselves and their offspring to higher levels are permanently dashed, to the great disadvantage of the nation. Old age pensions at 65 and the new proposal to raise the school age, even with its attendant costs and immoral maintenance allowance, both have good features, but they are not unmixed blessings, and though both are in reality an attempt to square the fall alike in birth- and death-rates with the passing phase of under-employment they both levy a toll of industrial victims.

Fair Play to Industry.

Industry is still looked on as a stalking horse. Big corporations fail to get justice in the medical man's mind merely because they are big and supposedly rich, but the margin between profit and loss under present-day conditions is often very small, and industry can only survive, prosper, and pay wages if everything is done to assist it to perform its function. Out of industrial profits our profession is supported directly and indirectly, and our social advances depend on the ability of industry to pay. Therefore we must not look on the industrial worker as one who is always in need of protection from his employer, and especially must we be on our guard against charging against the employer the costs of the ordinary risks of life—certifying them as occupational, and to that extent depleting the employing power of industry.

Every certificate is a fiduciary act, and can only be rightly given when all the facts are known. A wider inside knowledge of industrial and commercial procedure would enable our profession to render a service to British industry which would rank as a first-class measure of safeguarding.

SURGICAL NEEDLES.

To the Editor of THE LANCET.

SIR,—In view of recent correspondence in the press concerning the antiquity of the sewing needle, the following information may prove interesting to the readers of your journal. Mr. Harford Lowe, F.G.S., has investigated the use of the needle by primitive man in the Stone Age and has an enlightening theory that it may be considered as the lever which primarily lifted man above the condition of the brute.

The surgeon's needle can only be produced by old-fashioned hand processes owing to the large number of models designed to meet the special needs of modern surgery. This is undoubtedly well from the point of view of the surgeon as it ensures a degree of quality that only trained craftsmanship can give. Needles for surgical use devised from stone, ivory, and bone have been unearthed with collections of surgical instruments used by the early Romans and ancient Greeks, so one imagines that the Chinese, Japanese, and Egyptians during their development thousands of years ago must have fashioned needles from these same substances whether for some gorgeous embroidery to be worked, or the intricacies of a masterpiece in tapestry, or for the closing of a wound at a surgical operation in those pre-Lister days. So far as available records show it appears that the earliest steel surgeon's needles were made in the year 1810 by one Emanuel Shrimpton, whose son Emanuel in the year 1830 migrated to Redditch in company with other makers of various kinds of needles.—I am, Sir, yours faithfully,

June 6th, 1930. ACUS.

KING EDWARD'S FUND.

THE annual report of King Edward's Fund shows that the receipts for the last 12 months were £535,435, of which £115,000 represented the Thankoffering Fund for the King's Recovery. The ordinary distribution amounted to £250,000, and the special distributions brought the total expenditure to £378,000. Since the foundation of the fund in 1897 a total of £6,488,000 has been distributed. The year's expenses were £13,930—about 6¼*d.* per £1 of the total received. The accompanying report of the Voluntary Hospitals (Parliamentary) Committee sets out the reasons for the clause in the Road Traffic Bill authorising payment to hospitals treating patients injured in motor accidents, and adds that "as the Bill provides that, by means of compulsory insurance, there shall be funds out of which legal charges for the cost of the treatment of such injured persons shall be met, it is equitable that provision should at the same time be made for meeting the cost of hospital treatment; and that it is reasonable that the cost of treating these cases should be borne by the insurance of motorists rather than by the funds subscribed by the charitable public for the support of their local hospitals."